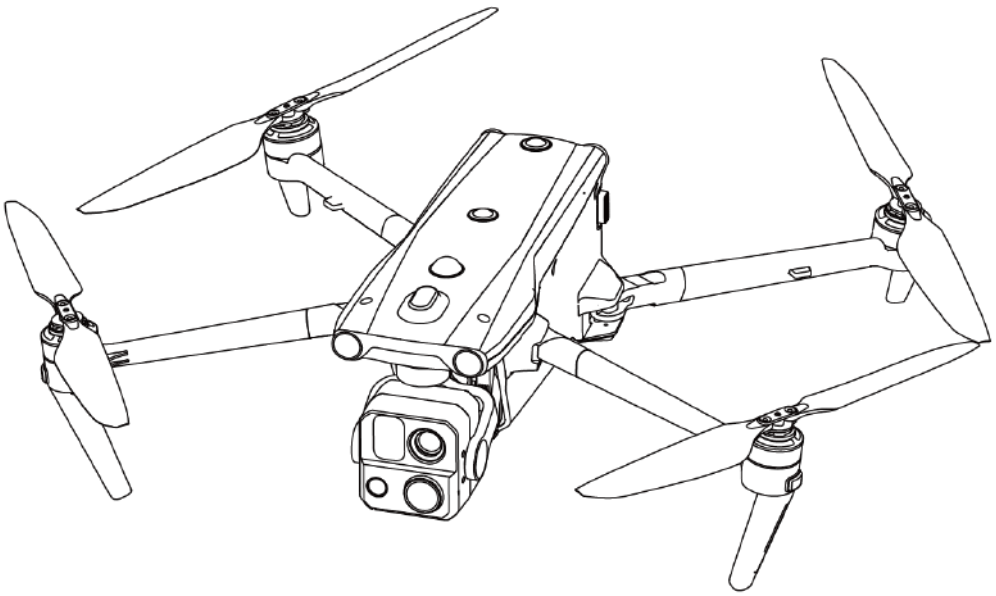
EVO Max 4T

User Manual

V1. 0 2023.05



AUTEL ROBOTICS

Introduction

Thank you for purchasing and using the Autel Robotics EVO Max 4T aircraft (hereinafter referred to as "EVO Max 4T").

The EVO Max 4T user manual is provided with the product, please keep this manual on hand so that you can refer to it at any time when needed. 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 and best practices of the product.

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.
	References: Page numbers to help you find chapters that explain in greater detail.
	Remarks: Supplementary information.
	Tips: Quick tips to get the best possible experience.

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Documentation

Autel Robotics provides the following documents and tutorial videos for you to use EVO Max 4T.

Material	Description
"Packing List"	A list of everything that should be included in the box.
"Disclaimer and Safety Operation Guidelines"	Instructions on how to operate the product safely.
"Battery Safety Operation Guidelines"	Basic knowledge and safe handling of batteries.
"Quick Start Guide"	Basic knowledge of operating the product.
"User Manual"	Instruct you to master the operation method of the product proficiently.
"Maintenance Manual"	Provide professional advice and precautions in inspection, maintenance to assist you in completing daily maintenance operations.

Tutorial Videos

To watch EVO Max 4T tutorials, please scan the QR code or visit:
https://www.autelrobotics.com/article/135.html

Addtional Downloads

To download essential software and documents for the EVO Max 4T, please visit:
https://www.autelrobotics.com/download/591.html

⚠ Warning

- Please make sure to check the aircraft and other parts listed in the product list in the packing box. Do not use incompatible parts or try to modify the aircraft in any way that does not comply with the official instructions.

Manual Guide

This manual contains 6 main chapters and 1 appendix, users can use the contents page or the following guide to find the corresponding chapters according to their needs.

Chapter	Chapter Overview	Purpose and Core Content
Chapter 1 Aircraft	Introduce the purpose, function and composition of the EVO Max 4T aircraft in detail.	After reading this chapter, the user can have a clear understanding of the various parts of the aircraft and the functions of the aircraft.
Chapter 2 Remote Controller	Introduce the operation instructions of the Autel Remote Controller V3.	After reading this chapter, users can quickly grasp the buttons and software functions of the remote controller, including app functionality. This chapter will teach users how to use the remote controller to its maximum potential.
Chapter 3 Smart Battery	Introduce the function, use, storage and disposal of EVO Max 4T smart battery in detail.	After reading this chapter, users can quickly grasp how to use, store and dispose of batteries.
Chapter 4 Autel Enterprise App	Introduce the operation instructions of the Autel Enterprise App in detail.	After reading this chapter, users can quickly master the functions of Autel Enterprise App and control the aircraft in the best way.
Chapter 5 First Flight	Introduce in detail the precautions, preparations, inspections and basic operations of the first flight.	After reading this chapter, the user can master the basics of flying the EVO Max 4T.
Chapter 6 Firmware Update And Maintenance	Introduce in detail the online update methods of the product's embedded firmware, device calibration, and maintenance.	After reading this chapter, users can quickly grasp how to update the EVO Max 4T firmware, how to calibrate the compass and IMU, and how to maintain and store the product in the best way.
Appendix A Product Specifications	Introduce the specifications of EVO Max 4T in detail.	After reading this chapter, users can quickly understand the detailed performance and functional parameters of EVO Max 4T.

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. The warranty period of this product is calculated from the day you receive the product. If you cannot provide valid evidence such as the purchase invoice, the warranty start date will be postponed by 90 days from the date of manufacture indicated by Autel Robotics.

Important

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

After-Sales Support

Please call the official hotline at (844) MY AUTEL or (844) 692-88 35, or email to support@autelrobotics.com for technical support.

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 for Technical Support, via our toll-free number: (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 or remote controller before the product is under warranty.

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Chapter 1 Aircraft

1.1 Aircraft Introduction

EVO Max 4T is equipped with a wide-angle camera, zoom camera, infrared thermal imaging camera and laser rangefinder, supports visible light 8K ultra-high-definition resolution video recording, 10x optical zoom, 640×512 high-definition thermal imaging, and (up to 1.2km) can use its laser rangefinder. The flight platform is equipped with an industry-leading 8-core processing chip, has powerful autonomous flight and self-organizing network mission capabilities, is equipped with a visual perception system and a millimeter-wave radar perception system, and has all-weather, omnidirectional obstacle avoidance system. The included Autel Enterprise app provides users with various task modes such as 3D routes, waypoint missions, rectangular or polygonal missions, oblique photography, etc. Users can import captured photos into the modeling software for 2D mapping or 3D model reconstruction. Security, inspection, surveying and mapping and other industries are empowered through the use of this product.

1.1.1 Aircraft Front View

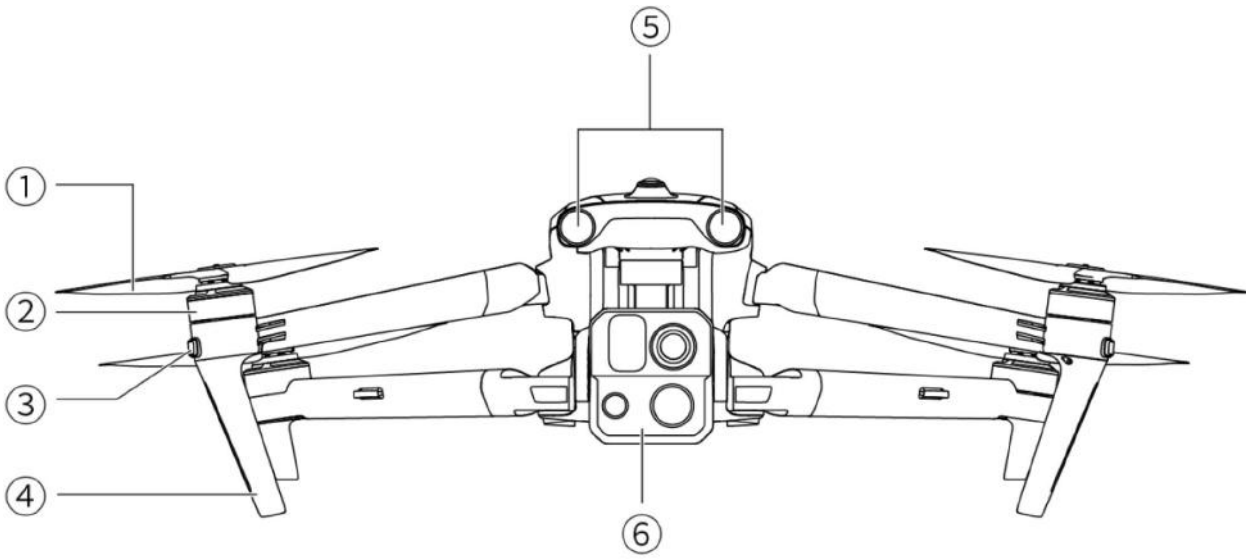


Figure 1-1 EVO Max 4T Front View

Table 1-1 EVO Max 4T Front View Description

No.	Name	Description
1	Propeller	Use the air flow to generate kinetic energy, and then convert the kinetic energy into thrust to push the aircraft forward.
2	Motor	Used to drive the propeller to rotate.

3	LED Indicators	The LED indicator light located on the front arms, a steady blue color is emitted, used to identify the front-facing direction of the aircraft.
4	Landing Gear	Used to support the aircraft to avoid damage to the bottom of the fuselage.
5	Forward Vision System	Used to sense the obstacles ahead and avoid the aircraft from colliding with them.
6	Gimbal Camera	The 4T gimbal integrates four sensor systems including wide-angle camera, zoom camera, infrared thermal imaging camera and laser rangefinder.

1.1.2 Aircraft Rear View

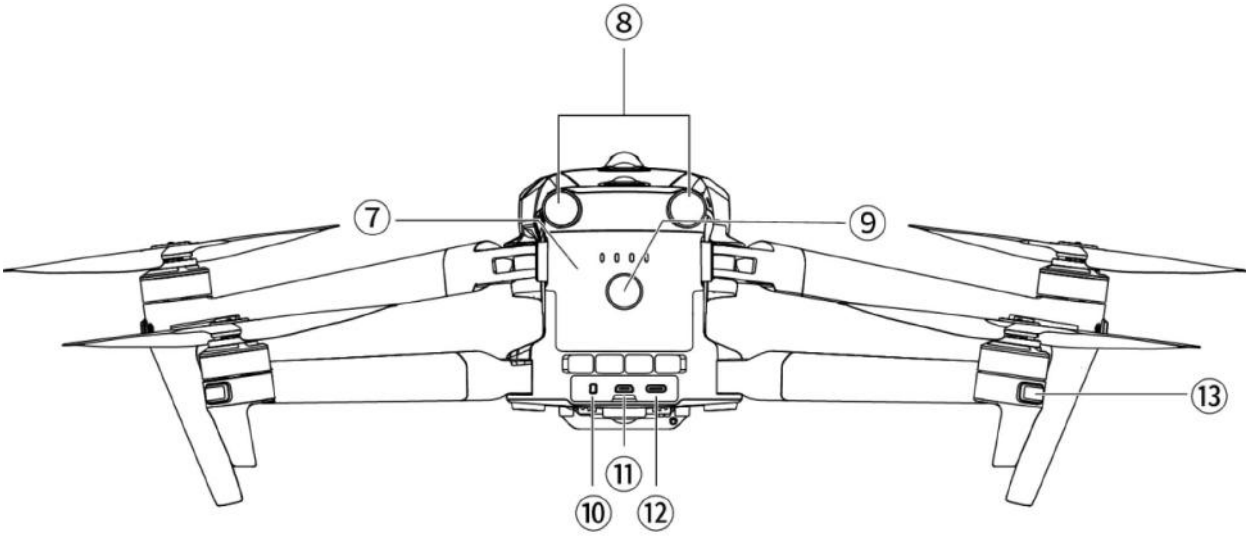


Figure 1-2 EVO Max 4T Rear View

Table 1-2 EVO Max 4T Rear View Details

No.	Name	Description
7	Aircraft Battery	Used to provide energy for aircraft operation.
8	Rear Vision Camera	Used to sense the obstacles in the rear and avoid the aircraft from colliding with them.
9	Power Button	Press and hold the power button for 3 seconds to start the aircraft.
	Pairing Button	Quickly press the power button twice to enter pairing mode.
10	microSD Card Slot	For inserting a microSD card.
11	External SSD Interface	For connecting an external SSD.
12	USB Type-C Interface	Used to connect to a computer for firmware updates or debugging.

13	Rear Arm LED Indicators	Used to display the current flight status of the aircraft.

Important

- The USB Type-C port of the aircraft cannot be used for charging. Do not connect the included remote controller charger. For charging the aircraft, please refer to "2.2.3 Checking Battery Level and Charge" in Chapter 2 Remote Controller and "3.2.4 Charging" in Chapter 3 Smart Battery.

1.1.3 Aircraft Top-Down, Bottom-Up View

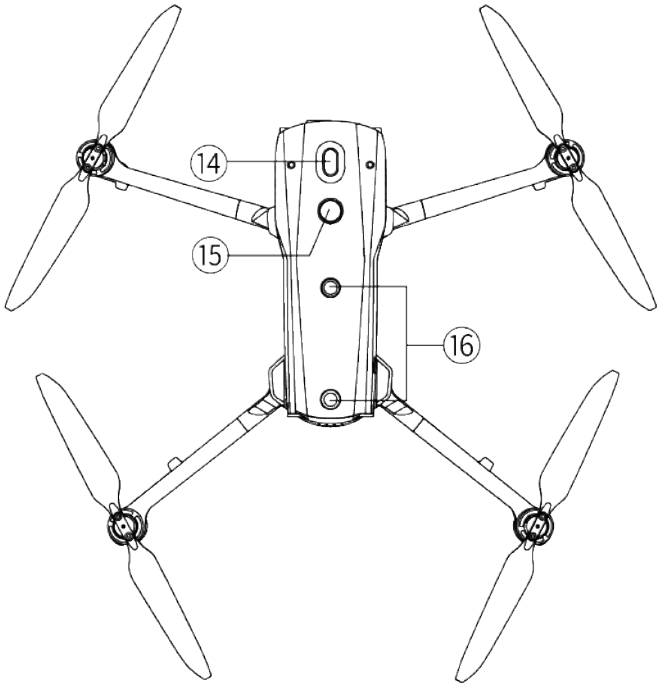


Figure 1-3 EVO Max 4T Top-Down View

Table 1-3 EVO Max 4T Top-Down View Details

No.	Name	Description
14	Mount Extension Interface	More types of additional mounts can be provided to the aircraft through the expansion interface, such as speakers, strobes, and RTK modules.
15	Upper Night Lights	Can emit high-intensity flashing lights to indicate the position of the aircraft at night to avoid air traffic accidents.
16	Upward Vision System	Used to sense obstacles above, and to the left and right of the aircraft and avoid collisions.

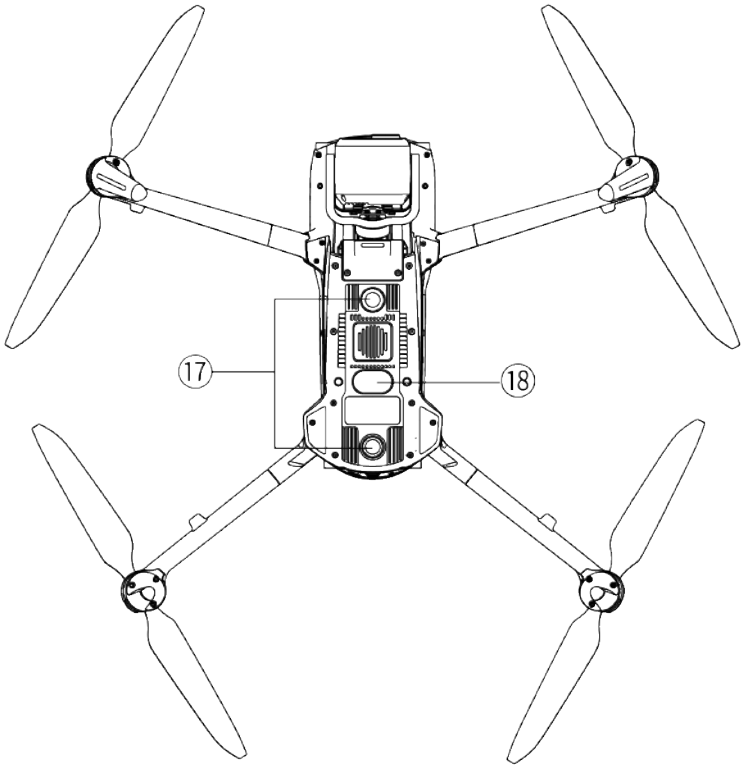


Figure 1-4 EVO Max 4T Bottom-Up View

Table 1-4 EVO Max 4T Bottom-Up Details

No.	Name	Description
17	Downward Vision System	Used to sense obstacles below and avoid collisions.
18	LED Landing Light	Provide lighting for the aircraft when it lands, and assist the downward vision obstacle avoidance sensor.

⚠ Warning

- There is a protective cover under the battery on the rear side of the fuselage to protect the microSD card slot, external SSD interface, and USB Type-C interface. Please make sure that the protective cover is closed during the flight.
- Do not disassemble the components that have been installed at the factory (except for the components explicitly permitted in the description in this manual), otherwise the product warranty will void.
- Please prevent the 4 millimeter-wave radars inside the fuselage from being blocked by foreign objects. The positions of the four millimeter-wave radars are located in the middle of the forward vision system, the rear vision system, the top shell of the fuselage, and the bottom shell of the fuselage.

1.1.4 Description of Flight Indicators

There is an LED indicator at the end of each arm of the aircraft. The LED indicators on the front arms will be steady blue after lit up, which can help you identify the direction of the aircraft's nose; the LED indicators on the rear arms will display the current flight status of the aircraft. **Table 1-6** below shows the meanings of the tail LED indicators.

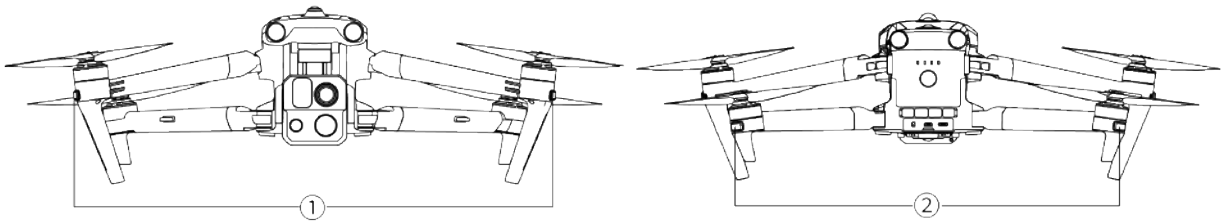


Figure 1-5 Flight Lights

Table 1-5 Description of the Indicator Lights on the Arms

No.	Name	Description
1	Front Arm LED Indicator	LED indicator lights at the end of the front arms on the left and right sides, turning blue when lit, used to identify the front-facing direction of the aircraft.
2	Rear Arm LED Indicator	LED indicator lights at the end of the rear arms on the left and right sides, used to display the current flight status of the aircraft.

Table 1-6 Description of the Indicator Lights on Rear Legs

Indicator status (R: red G: green Y: yellow)	Meaning
Normal	
RYG– Alternating / Fast Flashing	System Wake-Up / Self-Test
G– Slow Blinking	Aircraft is in GNSS Mode / Visual Positioning
Calibration	
Y– Fast Blinking	Magnetometer/IMU Calibration Data Collection
G– Fast Blinking	Magnetometer/IMU Calibration Goes to the Next Step
G– Always On	Magnetometer/IMU Calibration Successful
R– Always On	Magnetometer/IMU Calibration Failed
Warning	
Y– Slow Flashing	Aircraft is in ATTI Mode
Y – Fast Blinking	Remote Controller Not Connected to Aircraft
R– Slow Flash	Low Battery Warning

R– Fast Flashing	Critical Low Battery Alert
R– Always On	IMU Abnormal / Illegal Battery
Slow flashing: flashing once every 2s. Fast flashing: flashes twice every 1s.	

1.2 Gimbal Camera

The EVO Max 4T integrates four sensor systems: a wide-angle camera, zoom camera, infrared thermal imaging camera and laser rangefinder.

1.2.1 Introduction to the Gimbal Camera

The EVO Max 4T gimbal camera has a high-precision three-axis motor structure, which can keep the camera stable when the aircraft is flying, thus ensuring image stability and clarity. The mechanical rotation angle of the three-axis motor of the gimbal (pitch: -135°~45°; roll: -45°~45°; Yaw: -45°~45°) is shown in **Figure 1-6** here.

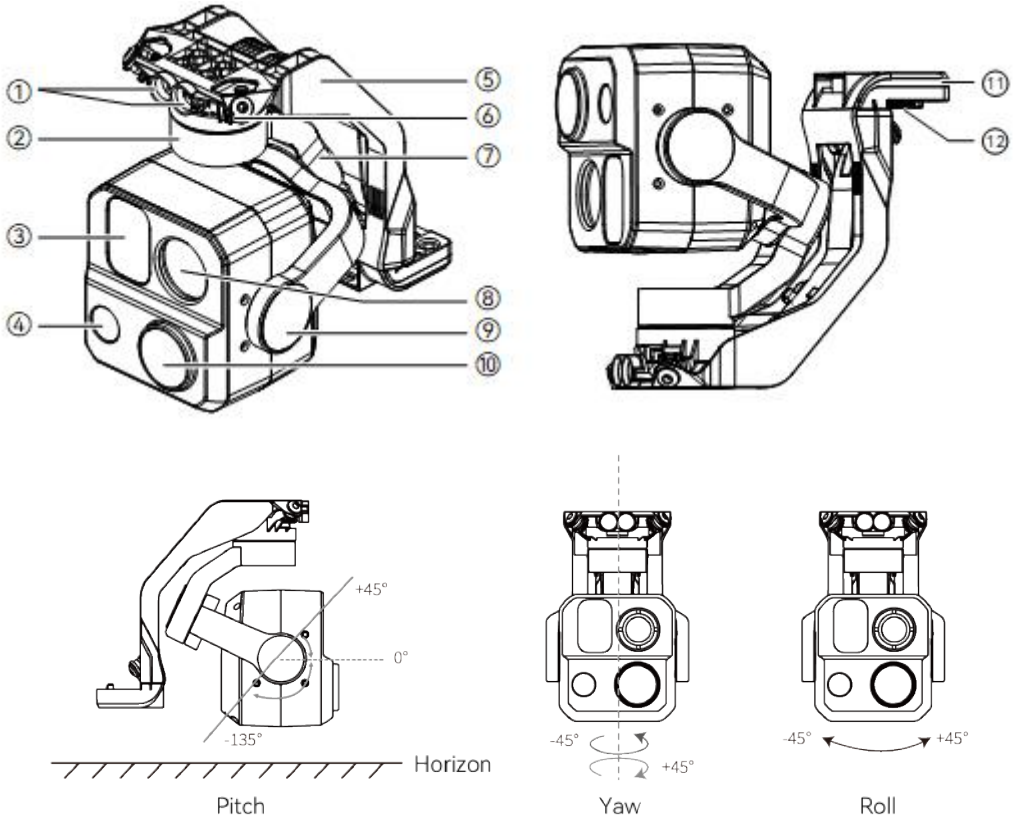


Figure 1-6 Gimbal Camera

Table 1-7 Gimbal Camera Details

No.	Name	Description
1	Cylindrical Holes	The two cylindrical holes at the front of the gimbal camera are used to fix one side of the gimbal camera to the two "fixed pins" in the "aircraft nose gimbal cabin".
2	Yaw Axis Motor	It is used to control the moving range of the camera to rotate left or right with its own axis (mechanical range: -45°~45°).
3	Laser Range Finder	The distance is accurately determined by measuring the time from the start of the laser emission to the time when the laser is reflected from the target.
4	Wide Angle Camera	1/1.28" CMOS, 50 million effective pixels. The wide-angle camera is used to capture images with a larger field of view within a shorter shooting distance.
5	Dampener Mount	Used to support dampeners and gimbal cameras, etc.
6	Dampener	Used to buffer the vibration of the gimbal camera.
7	Roll Axis Motor	Used to control the moving range of the camera to roll left or right (mechanical range: -45°~45°).
8	Infrared Thermal Imaging Camera	radiometric measurement range: -20℃ to 150℃, 0℃ to 550℃. The infrared thermal imaging camera is 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.
9	Pitch Axis Motor	It is used to control the moving range of the camera up or down (mechanical range: -135° to 45°, controllable movement range: -90° to 30°).
10	Zoom Camera	1/2" CMOS, 48 million effective pixels. The zoom camera is used to shoot distant scenes, making the distant scenes clearer.
11	Connector Cover	The protective cover above the connector is used to fix the other side of the gimbal camera to the bottom of the aircraft fuselage.
12	Connector	The connector of the gimbal camera is connected to the connector slot at the bottom of the aircraft fuselage.

⚠ Warning

- In order to ensure that the product can work normally, the ambient temperature during use must be between -20°C and 50°C.
- Be sure to use the gimbal protective cover to fix the gimbal camera, especially when transferring or storing the aircraft, 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 gimbal, 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.

1.2.2 Removing/Installing the Gimbal Camera

■ Removing the Gimbal Camera

The aircraft adopts a detachable gimbal design, please refer to the following disassembly steps:

1) Place the aircraft on a level surface with the bottom of the fuselage facing up.
2) Use a Phillips 2.0 screwdriver to unscrew the two screws fixing the "connector protection cover", as shown in **Figure 1-7**.
3) Slightly lift the "connector protection cover" and slide it back and up to take out the gimbal camera, as shown in **Figure 1-8** below.

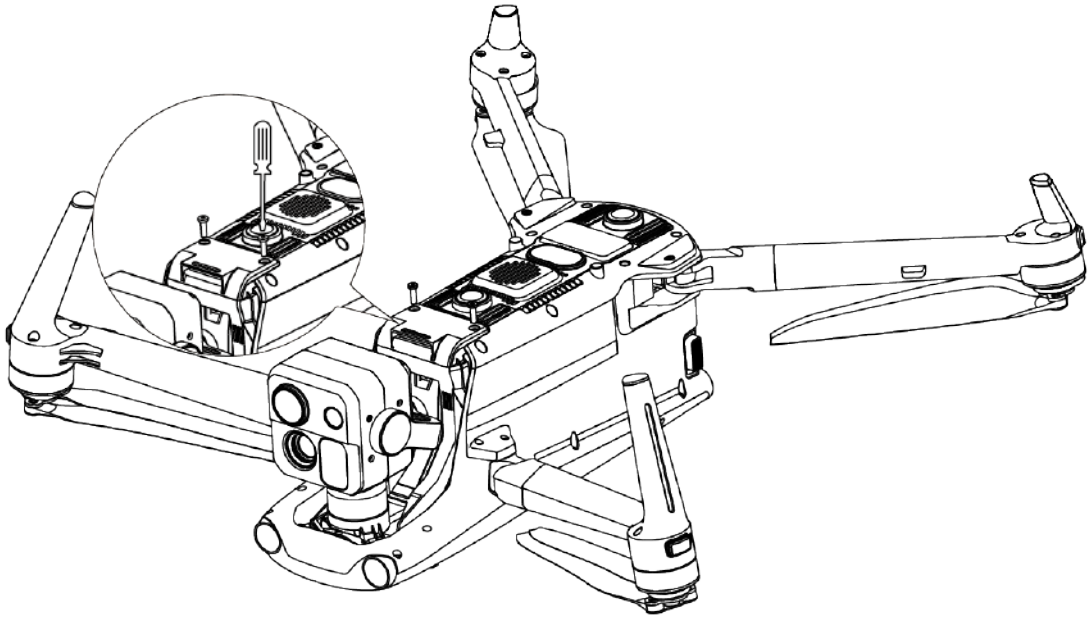


Figure 1-7 Remove the two screws securing the Connector Cover

Important

- When turning the aircraft upside down to remove the gimbal camera, please protect the upward vision system of the aircraft to avoid scratches.

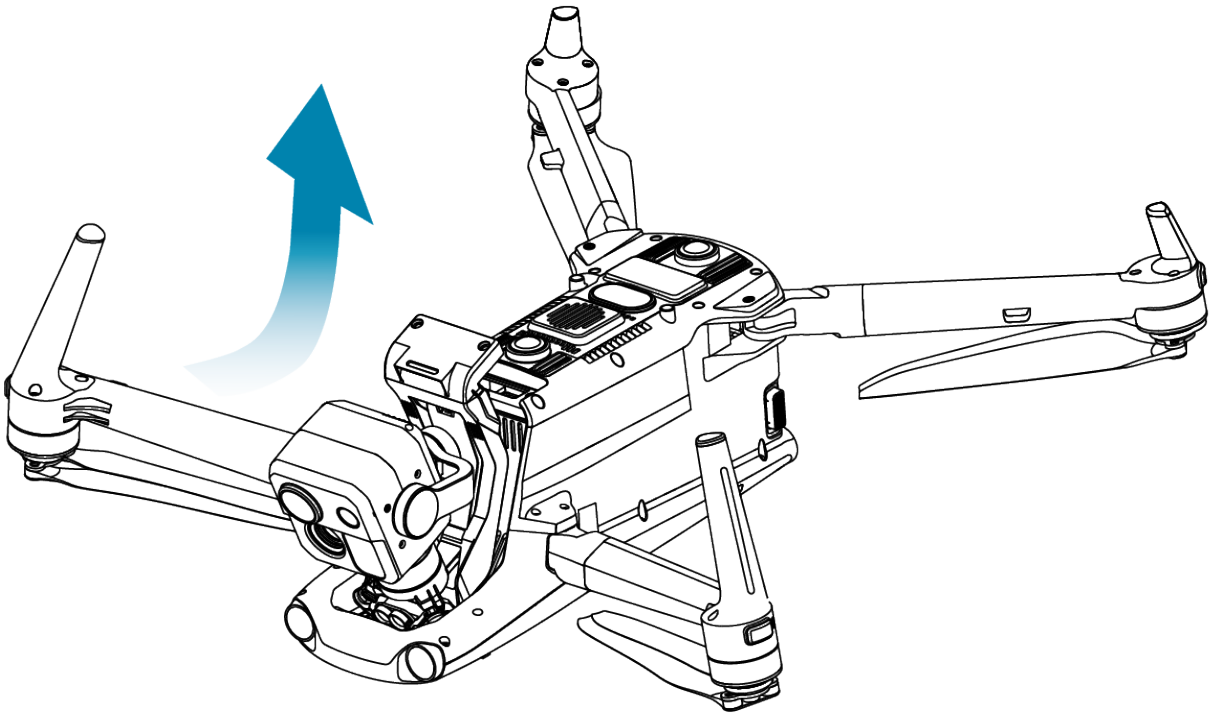


Figure 1-8 Slide back and up to take out the gimbal camera

■ Installing the Gimbal Camera

1) After aligning the cylindrical hole on the front end of the gimbal camera with the two fixed pins in the aircraft nose gimbal cabin, push and slide the gimbal camera forward until the connector protection cover is aligned Connector slot, as shown in **Figure 1-9**.

Important

- Please make sure that the Connector Cover of the gimbal camera is aligned with the Connector Slot at the bottom of the fuselage, otherwise it will affect the connection between the gimbal camera and the aircraft.

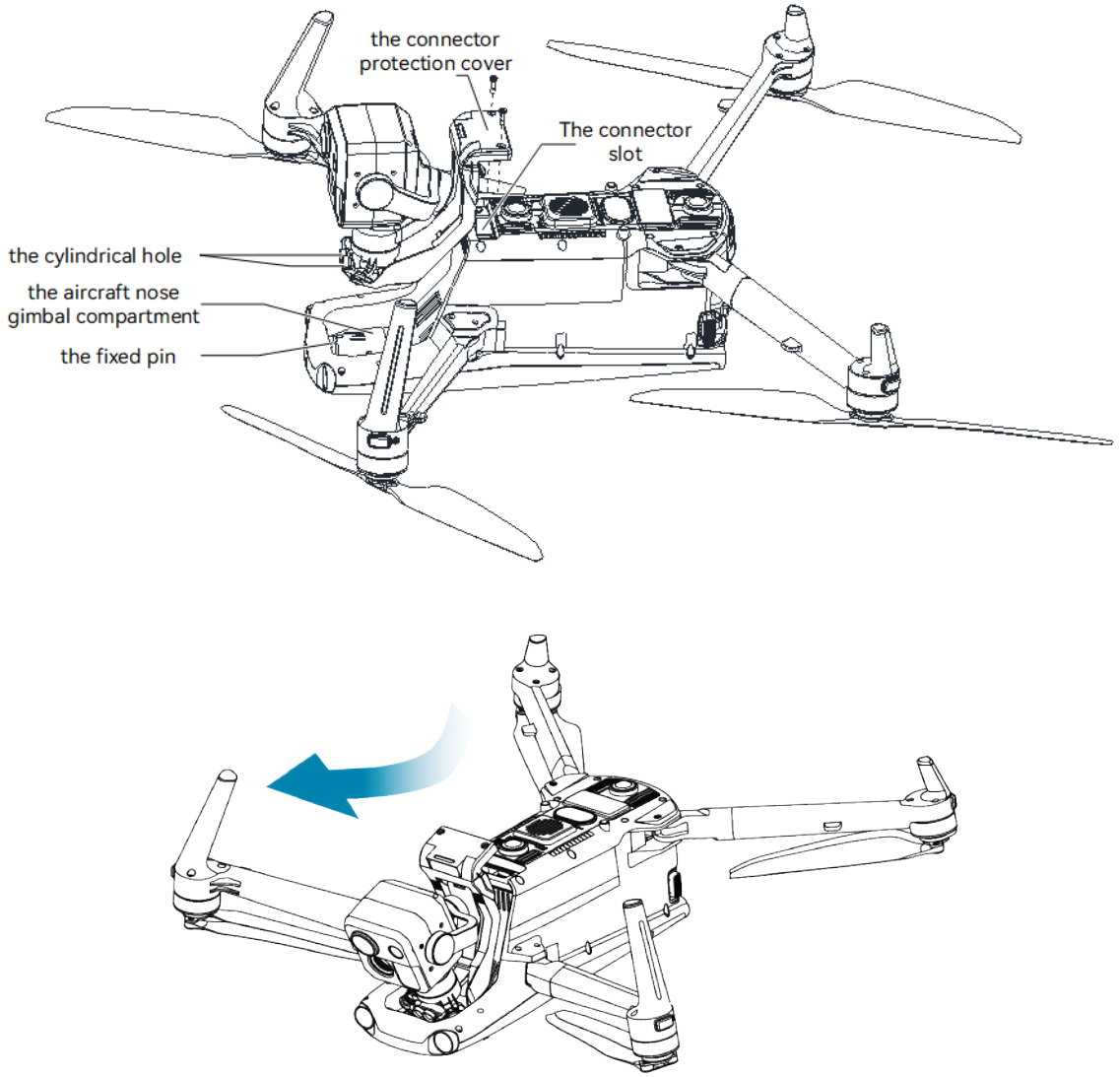


Figure 1-9 Slide down and forward to install the gimbal camera

2) Gently push down the "connector protection cover" to the bottom, so that the connector under the "connector protection cover" is inserted into the "connector slot", and the "connector protection cover" needs to be flush with the bottom of the aircraft.
3) Insert two screws into the two holes of the "connector protection cover", and tighten them with a Phillips 2.0 screwdriver, as shown in **Figure 1-10**.
4) Press and hold the battery power button for 3 seconds to power on the aircraft. If the connector cable of the gimbal camera is connected correctly, the gimbal will automatically rotate the camera to perform a self-test.

⚠ Warning

- After installing the gimbal camera to the aircraft, please ensure that all parts are fully fixed to avoid loss due to functional failures caused by loose assembly of the gimbal camera during flight.

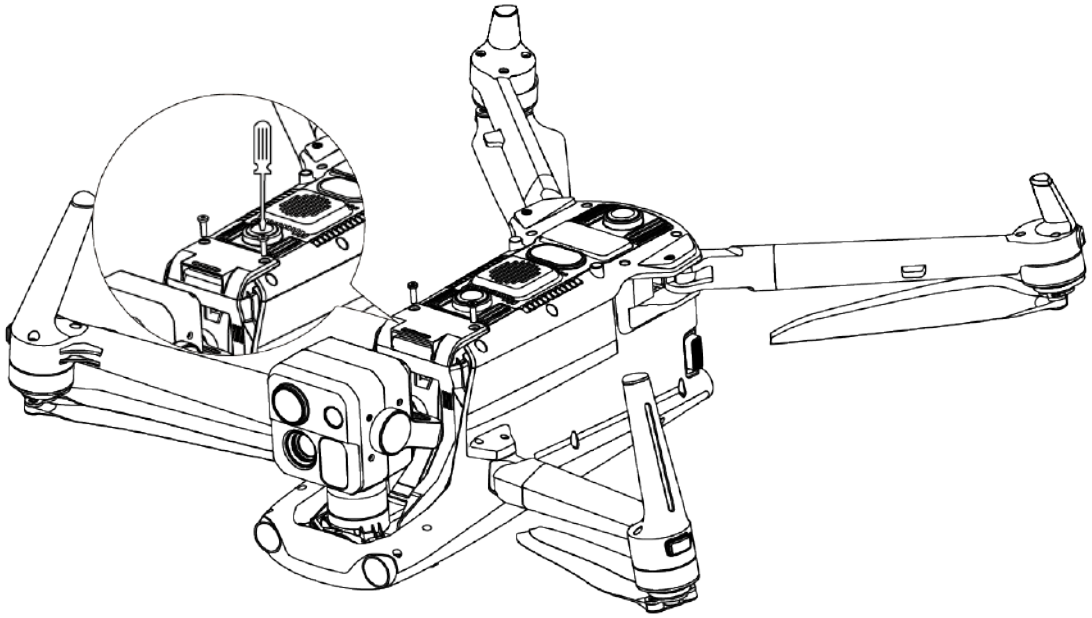


Figure 1-10 Install the Connector and fix the Connector Protective Cover

1.3 Flight Control System

EVO Max 4T achieves stable and convenient flight control through its built-in intelligent flight control system. The system supports a number of advanced functions, including return-to-home, failsafe, visual positioning system, etc.

Table 1-8 Flight Control System

Module	Description
IMU	A three-axis gyroscope and a three-axis accelerometer measure acceleration and angular velocity.
Compass	Measures the Earth's magnetic field and provides a heading reference for the aircraft.
GNSS Receiver	Receive global satellite navigation signals to measure longitude, latitude, and altitude.
Barometer	Measures atmospheric pressure and is used to determine the altitude of the aircraft.
Binocular Visual Perception System	Provide the aircraft with 720° obstacle awareness around the fuselage.
Millimeter Wave Radar	Provide the aircraft with all-day and all-weather obstacle avoidance capabilities.

1.3.1 Flight Modes

Depending on the availability of GNSS signals and flight conditions, the aircraft can

automatically switch between three flight modes.

Table 1-9 Flight Modes

Flight Modes	Description
GNSS Mode	GNSS mode is activated when the aircraft detects an appropriate GNSS signal. In GNSS mode, if the visual obstacle avoidance system is turned on, the visual system will provide auxiliary information to more accurately locate and avoid obstacles, provide stable and smooth flight control, and support return-to-home and failsafe 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 (ensure that the surrounding environment is well lit, the ground texture is clear, and the height of the aircraft must be within the perception range of the visual system), the visual positioning mode will be activated.
ATTI Mode	When there is no GNSS signal and the environment and height cannot meet the vision system, that is, when there is no GNSS signal and visual positioning failure at the same time, the ATTI mode will be activated. In this mode, the obstacle avoidance system is disabled, and the aircraft only controls the altitude through the barometer.

⚠ 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 as this may lead to accidents or loss of your aircraft.

1.3.2 Speed Modes

The user can set the default speed mode in the "Flight Control Settings" interface, or switch the flight speed modes in the "Status Notification Bar". For details, see "4.3.1 Flight Control Parameter Settings" and "4.4 Status Notification Bar".

Table 1-10 Flight Speed Modes

Speed Mode	Description
Smooth	Forward, backward, left, right 10m/s, up, down 3m/s.
Standard	Forward and backward 15m/s, left and right 13m/s, ascend 6m/s, descend 5m/s.
Ludicrous	Forward 23m/s, move backward, left, right 20m/s, ascend 8m/s, descend 6m/s.

⚠ Warning

- If you have not fully mastered the flight control of the aircraft, it is not recommended for

users to switch to Ludicrous mode.

- When switching to Ludicrous mode, the aircraft's obstacle avoidance system will be disabled. If the obstacle avoidance system fails, 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 flying speed is greatly improved compared with the standard mode, so the braking distance in this mode will be correspondingly extended, and the user should maintain a braking distance of at least 50 meters when operating the aircraft in this mode. To ensure personal and flight safety.

1.3.3 Intelligent Flight Function

■ Accurate Landing

Accurate landing uses the downward binocular vision system of the aircraft to record the information at its take-off position. During the return and landing process, the visual algorithm is used to calculate the position error between the aircraft and its take-off point in real time, so as to control the aircraft to land accurately at the take-off position.

■ Safe Landing

The Safe Landing feature utilizes the aircraft's downward vision system to create a depth image, then calculate the flatness and angle of the depth image to detect whether the surface is flat enough for a safe landing.

1.4 Data Transmission

1.4.1 Install/Remove microSD card

Before turning on the aircraft, insert a microSD card into the port, as shown in **Figure 1-11**.

If you plan to shoot high-definition video, we recommend using a Class 10, UHS-3 microSD card.

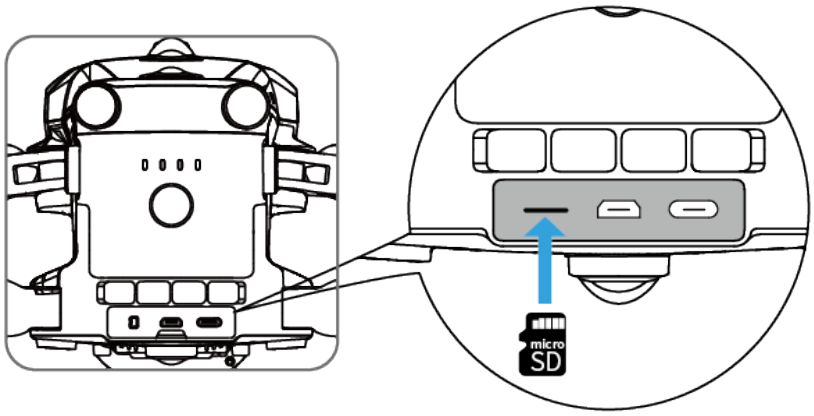


Figure 1-11 Install microSD Card

⚠ Warning
• To prevent data loss, please turn off the aircraft before removing the microSD card.

1.4.2 Connecting to PC/MAC

To transfer photos and videos to PC/MAC, please use a data cable to connect to the computer through the USB Type-C port of the aircraft, as shown in **Figure 1-12**.

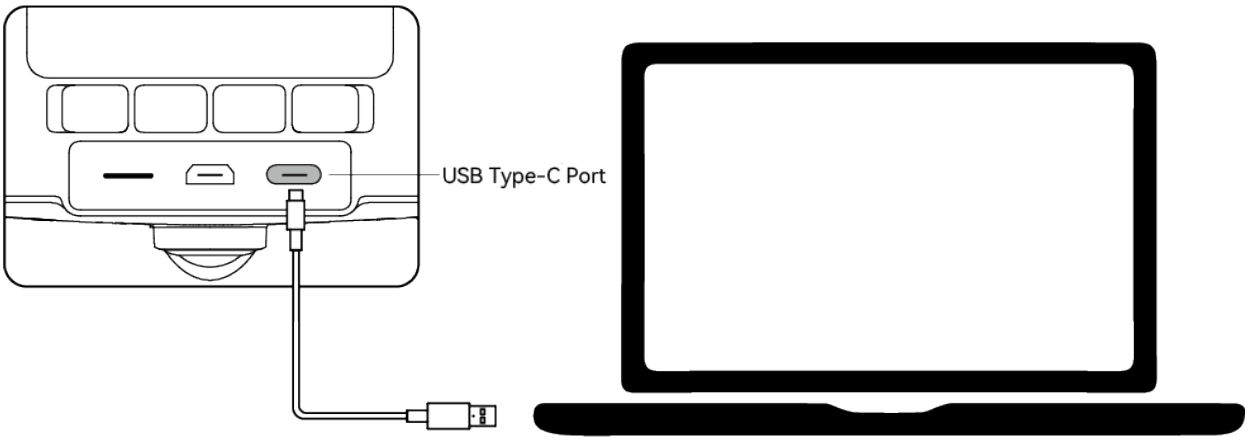


Figure 1-12 Connect to PC/MAC via USB Type-C port

Chapter 2 Remote Controller

2.1 Introduction

Autel Smart Remote Controller V3 can be used with any Autel aircraft (that is compatible with this device) to transmit high-definition images in real time. It allows for control of aircraft and communications from a distance of up to 20 kilometers. The remote controller has a built-in 7.9-inch 2048×1536 ultra-high-definition ultra-bright screen with a maximum brightness of 2000 nits, which is clearly visible under direct sunlight. The remote controller has a built-in 128G memory, which allows for easy storage of footage and media while on the move. The device can be used for roughly 4.5 hours when the battery is fully charged (and the screen brightness is set to 50%).

Remarks

- The working hours of the remote controller are derived from the test data, which may vary depending on the test environment and conditions.

2.1.1 Remote Controller Top-Down View

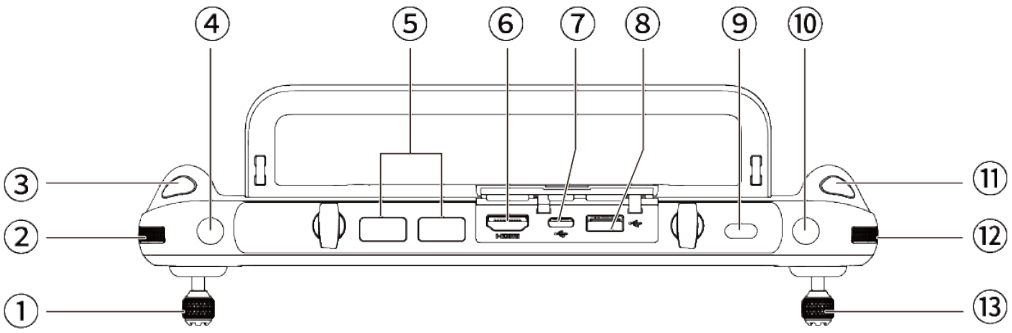


Figure 2-1 Remote Controller Top View

Table 2-1 Remote Controller Top View Details

No.	Name	Description
1	Left Command Stick	Default mode of operation: Control the aircraft's elevation and heading (you can set the command stick layout in the Autel Enterprise App).
2	Gimbal Pitch Dial Wheel	Turn the dial to adjust the pitch angle of the gimbal.
3	Video Recording Button	Tap to start/pause recording video.
4	User-defined Key C1	Use the Autel Enterprise App to customize the setting function, see "4.3.3 Remote Controller Settings" in Chapter 4 Autel Enterprise app for details.

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	HDMI Interface	Connect an HDMI cable to output video/audio, output the live view of RC to a monitor or other device that can support HDMI.
7	Type-C Interface	Used for remote controller charging or device debugging.
8	USB Type-A Interface	Expandable 4G/5G module or external USB device for data transmission.
9	Power Supply Button	Long press for 3s to turn on/off the remote controller.
10	User-defined Key C2	Use the Autel Enterprise App to customize the setting function, see "4.3.3 Remote Controller Settings" in Chapter 4 Autel Enterprise App for details.
11	Shooting Button	Tap to take a photo.
12	Zooming Dial Wheel	Turn the thumbwheel to adjust the zoom factor of the camera.
13	Right Command Stick	Default operation mode: control the translation of the aircraft in four directions: front/back/left/right.

2.1.2 Remote Controller Front View

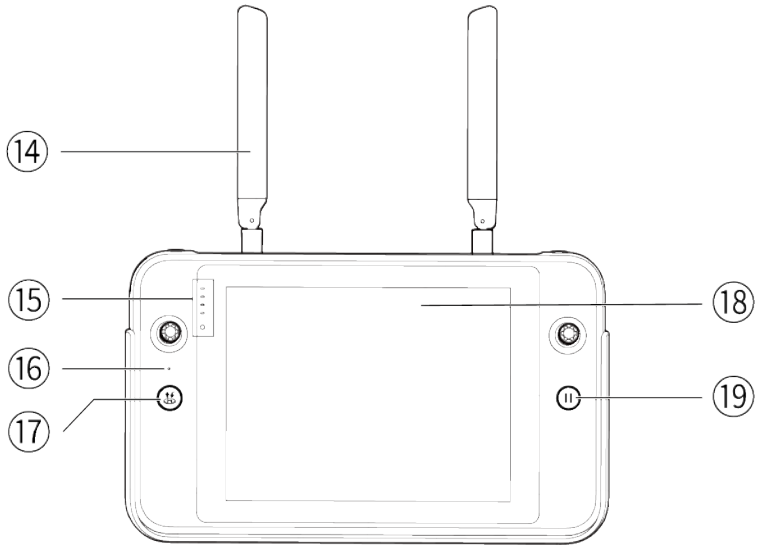


Figure 2-2 Remote Controller Front View

Table 2-2 Remote Controller Front View Details

No.	Name	Description
14	Antenna	Communicates with aircraft via 2.4GHz/5.8GHz
15	Battery Level Indicator	Displays the remaining remote controller battery level.

16	Audio Input	Receive an external audio source.
17	One-click 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 can take off. To order the aircraft to return to the takeoff point from flying, hold the button for 2 seconds, the aircraft will begin the return-to-home process.
18	Display Screen	Display screen, supports touch operation.
19	Pause Button	Short press to control the aircraft to suspend autonomous flight and hover in place, or resume autonomous flight.

2.1.3 Remote Controller Rear View

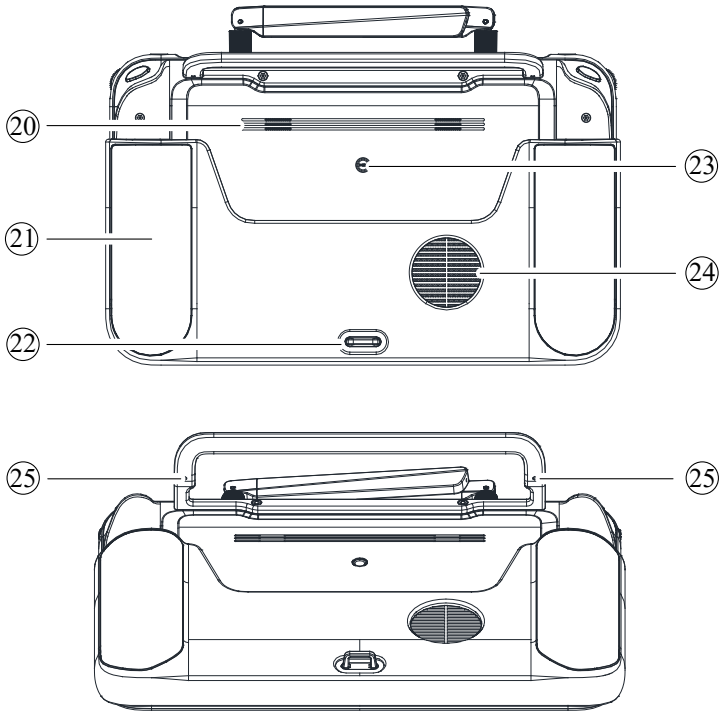


Figure 2-3 Remote Controller Rear View

Table 2-3 Remote Controller Rear View Details

No.	Name	Description
20	Speaker	Plays sound to indicate the status of the aircraft.
21	Protective Case	Prevent external damage such as collision and abrasion of the remote controller.
22	Lower Hook	Used to connect and fix the remote controller strap.
23	Standard ¼ Interface	For attaching tripods.

24	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.
25	Command Stick Storage Slot	Used to store left and right joysticks.

2.2 Preparation Before Use

Please follow the instructions in the following sections to prepare the remote controller for use.

2.2.1 Installing the Remote Controller Strap (as required)

1) Clip the two metal clips on the lanyard to the narrow positions on both sides of the metal handle of the controller.
2) Bypass the lower hook at the bottom of the back of the controller, then fasten the metal button.
3) After wearing the lanyard over the neck, as shown in **Figure 2-4**, which can reduce the pressure on the hand during use.

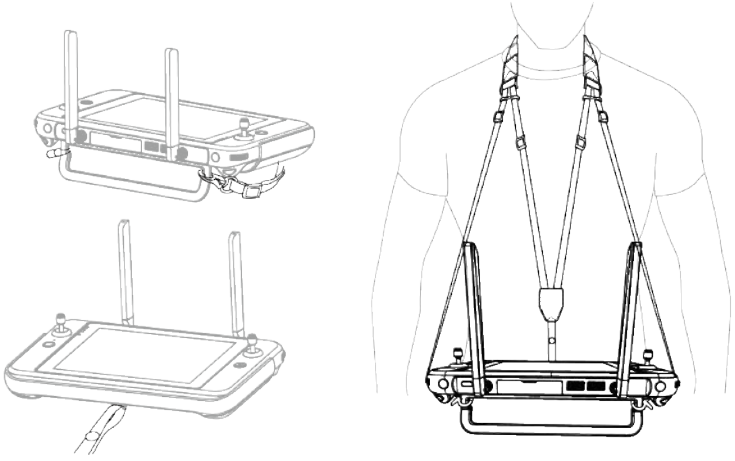


Figure 2-4 Installing the Remote Controller strap (as required)

2.2.2 Install/Store Command Sticks

■ **Install sticks**

There is a threaded hole for storing the command sticks above the handle on the back of the controller. Rotate counterclockwise to remove the two joysticks and then rotate them clockwise to install them separately on the remote controller.

■ **Store sticks**

Simply follow the reverse steps of the above operation.

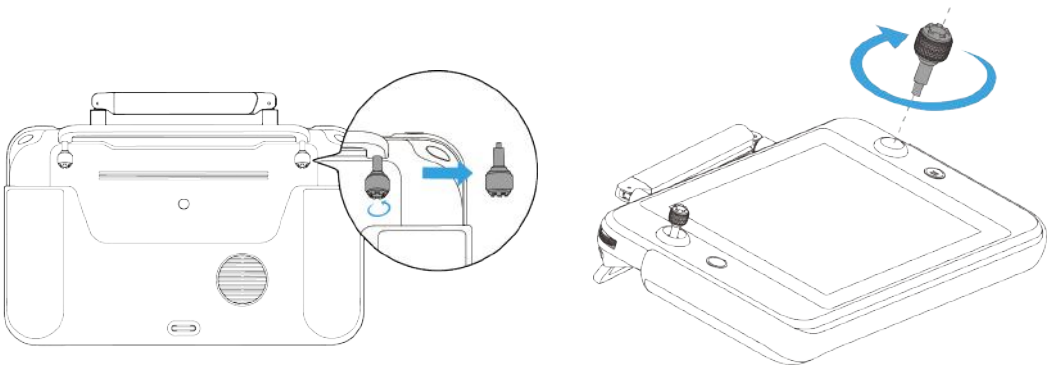


Figure 2-5 Install/Store Command Sticks

2.2.3 Checking Battery Level and Charge

Press and hold the power button on the top of the remote controller for 3 seconds to turn it on. In the off state, short press the power button of the remote controller for 1 second, and the power indicator light will display the power of the remote controller, and the remaining power, as shown in **Figure 2-6**:

Tips

- When the controller is on, users can check the current battery level on the top status bar of Enterprise APP, or by pulling down the top notification bar or entering the main interface of the remote controller.
- The function of viewing the battery percentage can be enabled on the remote controller main interface ("Settings" > "Battery" > "Battery Level").
- Please connect the official remote controller charger to the USB Type-C port of the device by using the remote controller charging cable. Please refer to "2.1.1 Remote Controller Top-Down View" in Chapter 2 Smart Remote Controller and "5.3.2 Charging" in Chapter 5 First Flight.

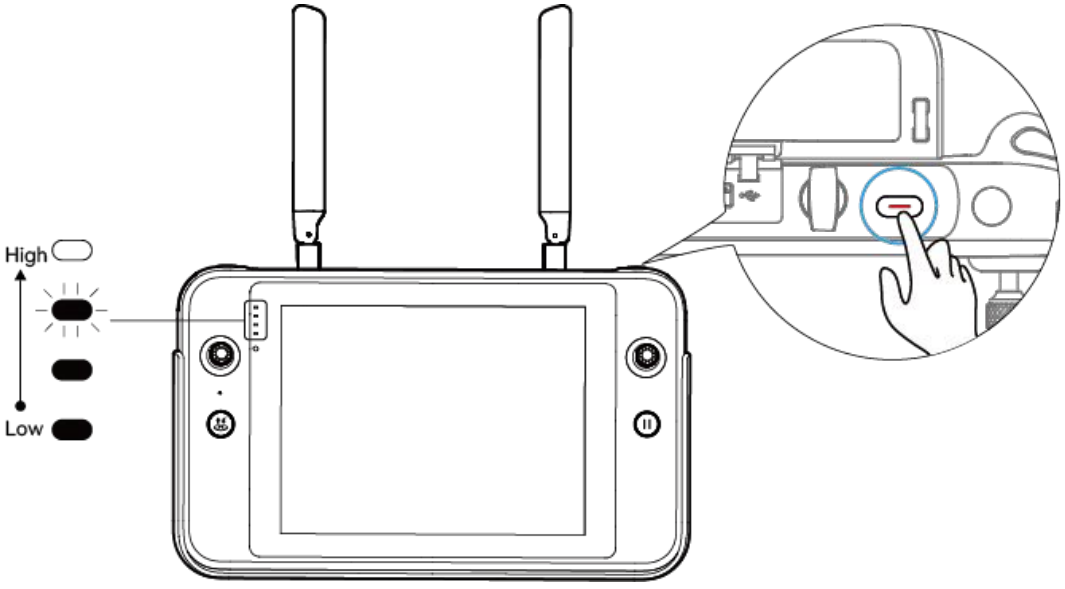


Figure 2-6 Check Power

Table 2-4 Battery Remaining

Power Display	Meaning	Power Display	Meaning
	1 light always on: 0%-25% power		2 lights always on: 25%-50% power
	3 lights always on: 50%-75% power		4 lights always on: 75%-100% power

2.2.4 Adjusting the Antenna Position

The strength of the signal received by the antenna varies based on angle. Confirm that the remote controller antenna has been deployed and the antenna position has been adjusted. 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, as shown in **Figure 2-7**.

Important

- When operating the aircraft, make sure the aircraft is within the best communication range.
- Do not use other communication devices in the same frequency band at the same time, so as not to interfere with the remote controller signal.
- When flying, if the Autel Enterprise App is in a poor image transmission signal state, the remote controller will prompt the user. Please adjust the antenna orientation according to the prompt to ensure that the aircraft is in the best data transmission range.
- Please ensure that the antenna is securely fastened. If the antenna becomes loose, please rotate the antenna clockwise until it is firmly fastened.

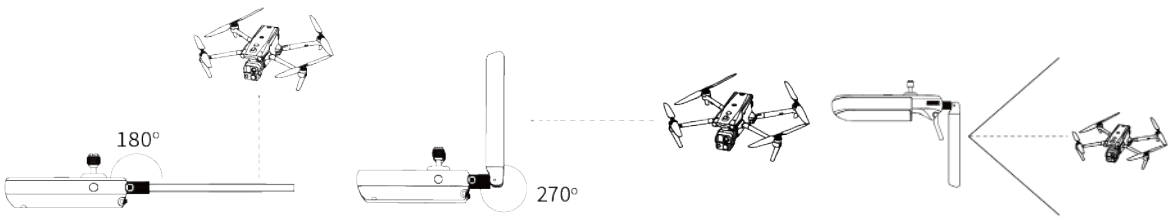
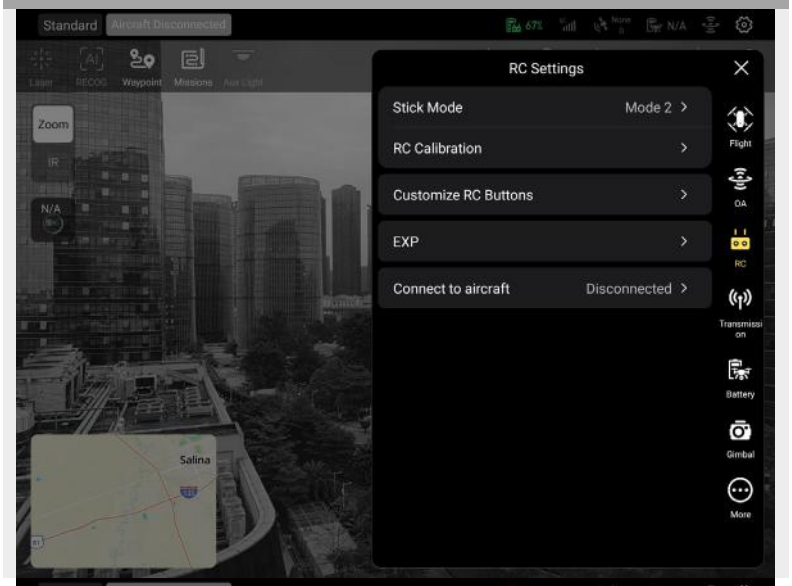
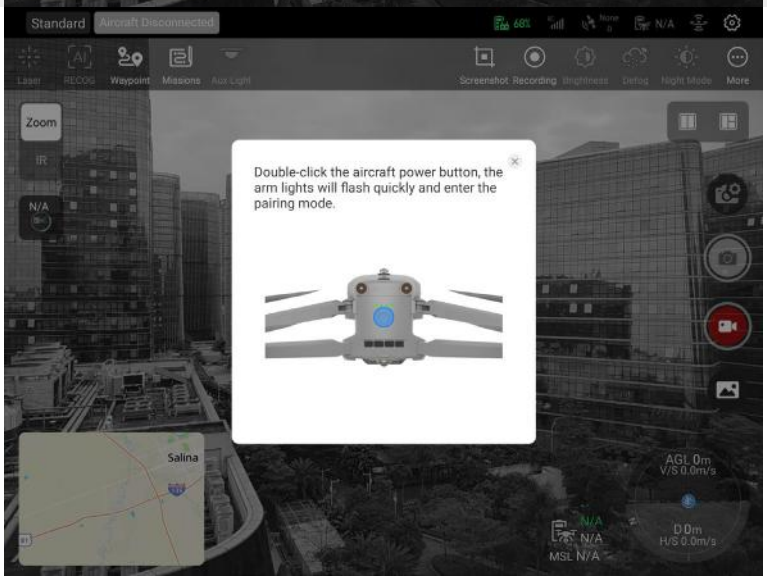


Figure 2-7 Always keep the antenna perpendicular to the aircraft for the best signal quality

2.2.5 Pairing (Connecting to Aircraft)

Please follow the procedure shown in **Table 2-5** for pairing.

Table 2-5 Aircraft Pairing

Step	Reference
1) Confirm that the current remote controller and aircraft are turned on. After entering the main interface of the remote controller App, click"⚙", then click"🤖", finally clicking "Connect to Aircraft".	
2) After the dialog box pops up, double-click the power button on the fuselage to complete the pairing process with the remote controller.	

Important

- When pairing the aircraft and remote controller, please keep the distance between them within 50cm.

2.2.6 Forced Frequency Pairing

When you need to perform forced pairing, please turn off the remote controller first.

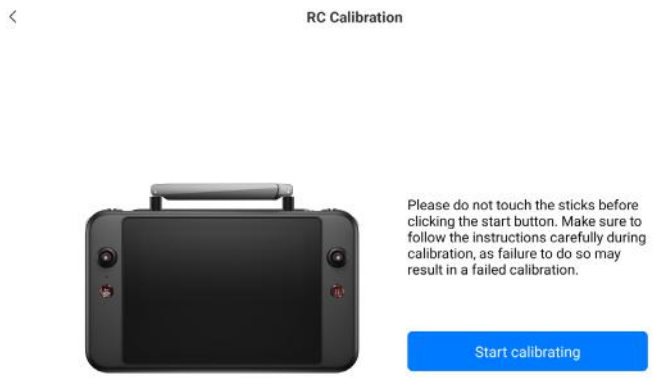
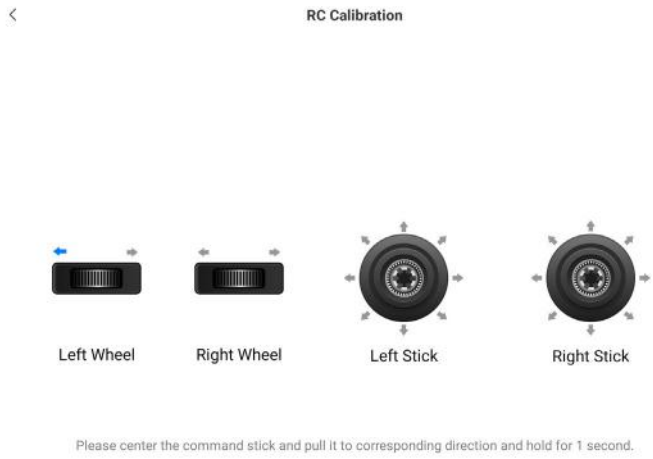
1) Press and hold the power button and the Home button of the remote controller at the same time, and the power indicator of the remote controller will flash quickly, indicating that it has entered the forced frequency pairing state.
2) Make sure the aircraft is turned on, and then double-click the power button of the aircraft, and the indicator light on the arm of the aircraft will flash quickly.
3) After the aircraft arm indicator light flashes quickly and the remote controller battery

indicator light flashes quickly, it indicates that the frequency pairing is successfully done.

2.2.7 Remote Controller Calibration

If the remote controller is abnormal, it is recommended to calibrate it, as shown in **Table 2-6**.

Table 2-6 Remote Controller Calibration

Step	Reference
1) Confirm that the current Remote Controller is turned on. After entering the app, click "⚙"">"🤖">"remote controller Calibration", and finally follow the page prompts to calibrate the remote controller.	
2) Calibration of the dials and command sticks: According to the calibration guide page of the remote controller, move the left and right dials and the left and right command sticks according to the directions shown in the figure and hold for 1 second. At this time, a beep will be heard, and the calibration direction icon will be changed from gray to dark blue, indicating that the orientation calibration was successful. There is no order in which directions are calibrated, until all directions are calibrated, the remote controller calibration is done.	

2.3 Remote Controller Main Interface

After turning on the remote controller, it enters the main interface of the Autel Enterprise App by default. Users can slide down the top of the touch screen or slide up the bottom of the touch screen to display the notification bar, and click the "Home" button or the "Back" button to enter the "Remote Controller Main Interface". Swipe left and right on the "Remote Controller Main Interface" to switch between different screens, and users can enter other applications according to their needs.

Table 2-7 Remote Controller Main Interface Details

No.	Name	Description
1	Time	View the current system time.
2	Location Info	Indicates that location information is currently enabled. If not enabled, the icon is not displayed. Users can click "Settings" to enter the "Location Information" interface to quickly turn on or off location information.
3	Wi-Fi Status	Indicates that Wi-Fi is currently connected. If not connected, the icon is not displayed. The user can quickly turn on or off the connection to Wi-Fi by sliding down anywhere on the "Remote Controller interface" to enter the "shortcut function panel".
4	Battery Status	Check the current battery status of the remote controller.
5	Shortcut Menu	Shortcuts for applications.
6	Back Button	Click to return to the previous page.
7	Home Button	Click to jump to the "Remote Controller Main Interface".
8	Background Button	Click to view all background programs currently running and take screenshots. Press and hold the application to be closed and slide up to close the application. Select the location where you want to take a screenshot, and click the "Screenshot" button to print, transfer and edit the screenshot.

References

■ **Autel Enterprise**

Click to enter "Autel Enterprise App", please refer to "Chapter 4 Autel Enterprise App".

■ **Google Chrome**

Click to enter "Google Chrome", which can be used for web browsing, data download & upload, etc.

■ **Settings**

Click to enter the settings function, you can set the network, Bluetooth, applications and notifications, battery, display, sound, storage, location information, security, language, gestures, date and time, device Name, etc.

■ **Album**

Click to view the images saved by the current system.

■ **File**

Click to manage the files saved in the current system.

■ **System Tools**

support log function and restore factory settings.

2.3.1 Shortcut Menu

Swipe anywhere in the "Remote Controller Main Interface" to pop up the "Shortcut Function Panel". Users can use shortcut icon functions such as Wi-Fi, Bluetooth, screenshots, screen recording and airplane mode.

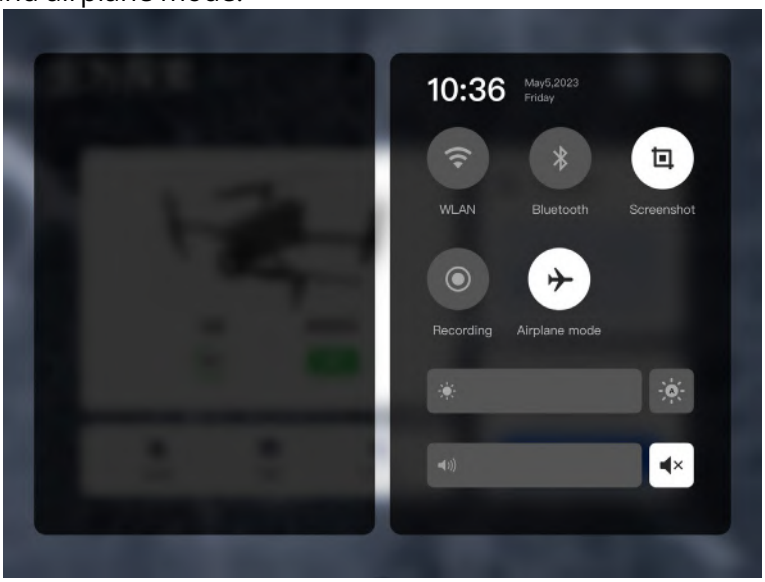


Figure 2-8 Shortcut Menu

References

■ **Wi-Fi**

Click to enable or disable the Wi-Fi function. Long press to enter WLAN settings and select the wireless network to be connected.

■ **Bluetooth**

Click to turn on or off the Bluetooth function. Long press to enter the Bluetooth settings and select the Bluetooth to be connected.

■ **Screenshots**

Click to use the screenshot function, which will capture the current screen (hide the shortcut panel to take a screenshot).

■ **Screen Recording**

After clicking the icon, a dialog box will pop up, where you can choose whether to enable the functions of recording audio and displaying the touch screen position, and then click the "Start" button, wait for 3 seconds, and start screen recording. Click the icon again or tap Screen Recorder to turn off screen recording.

■ **Airplane Mode**

Click 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.

■ **Notification Center**

View system or app notifications.

2.4 Operating Instructions

2.4.1 Command Stick Description

When using the remote controller for flight control, you need to know the flight operation of the current remote controller in detail and fly with caution. The command stick modes are **Mode 1**, **Mode 2** (default), and **Mode 3**, as shown in **Figure 2-9**, **Figure 2-10**, and **Figure 2-11**.

⚠ Warning

- 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 movement of the command stick. When there are people or obstacles near the aircraft, please don't move the stick excessively.
- Do not hand over the remote controller to persons who have not learned how to use the remote controller.

■ **Mode 1**

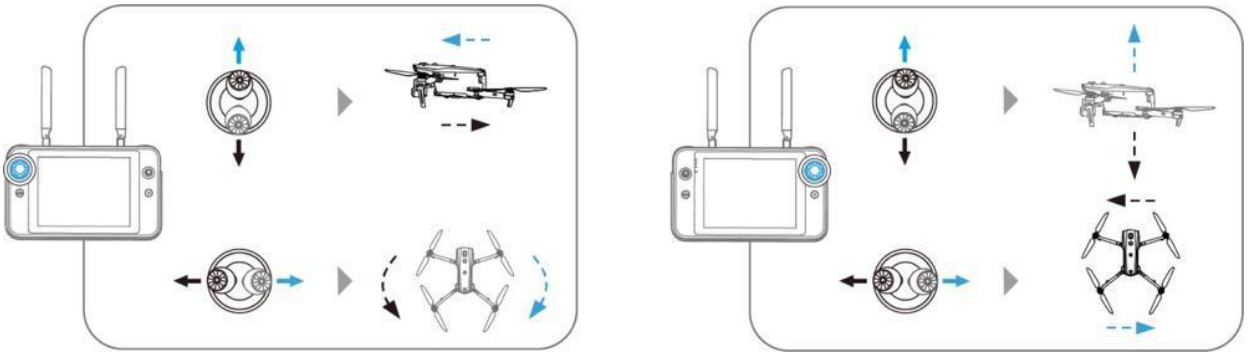


Figure 2-9 Mode 1

Table 2-8 Mode 1 Details

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

■ Mode 2

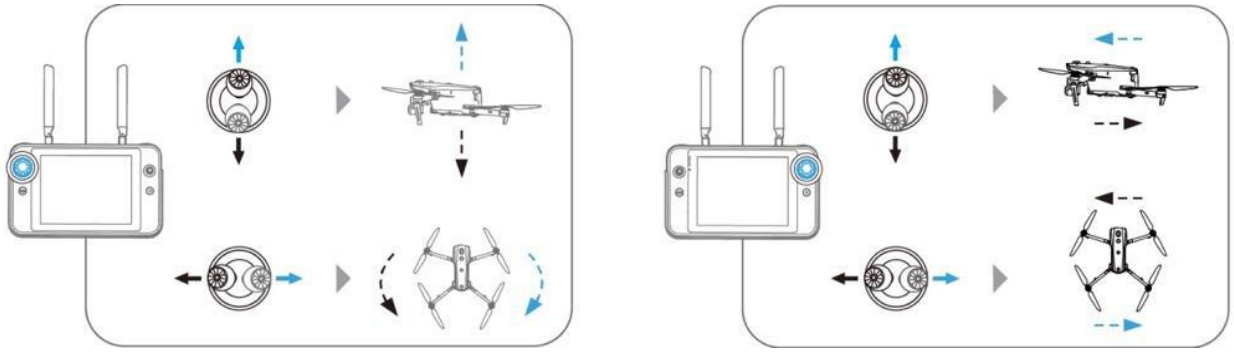


Figure 2-10 Mode 2

Table 2-9 Mode 2

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

■ Mode 3

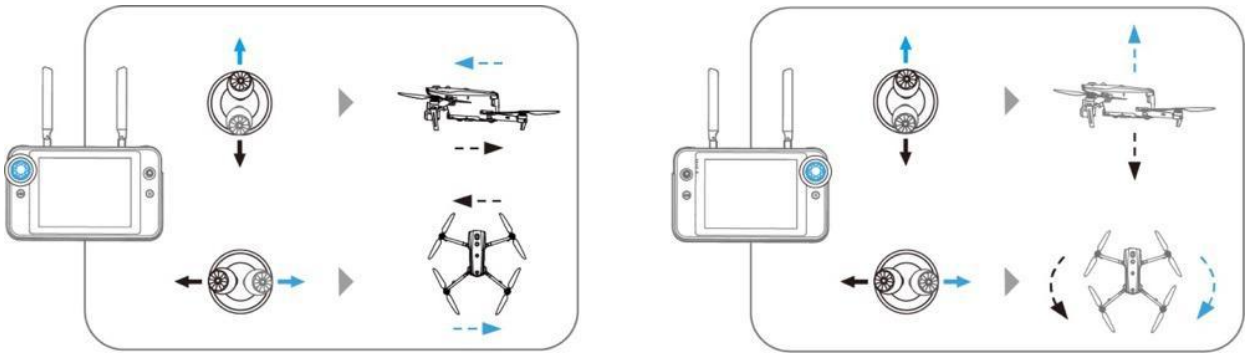


Figure 2-11 Mode 3

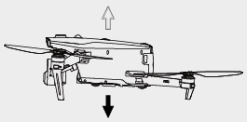
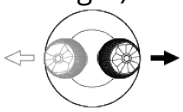
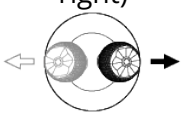
Table 2-10 Mode 3

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

2.4.2 Set Command Stick Modes

The layouts are divided into **Mode 1**, **Mode 2**, and **Mode 3**. You can set the input mode according to your preference. Please refer to Chapter 4 Autel Enterprise App "4.3.3 Remote Controller Settings". The factory default control mode of the remote controller is "**Mode 2**".

Table 2-11 Default Control Mode (Mode 2)

Mode 2	Aircraft Flight Status	Control Method
Left stick (move the stick upward or downward)		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, the aircraft will rise vertically; pull the stick down, the aircraft will descend vertically. 3. When the joystick is returned to the center, the altitude of the aircraft remains unchanged. 4. When the aircraft takes off, please push the joystick up to above the neutral position, the aircraft can lift off the ground.
Left stick (move the stick left or right) 		1. The left and right sticks are yaw sticks, which are 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 joystick 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 amount of the stick, the greater the rotational angular velocity of the aircraft.
Right stick (move the stick upward or downward)		1. The up and down direction of the right joystick is the pitch stick, which is used to control the flight of the aircraft in the forward and backward direction. 2. Push the stick up, the aircraft will tilt forward and fly towards the front of the nose; pull the stick down, the aircraft will tilt backward and fly towards the tail of the aircraft. 3. When the joystick is returned to the center, the forward and backward direction of the aircraft remains horizontal. 4. The larger the joystick, the faster the flight speed and the larger the tilt angle.
Right stick (move the stick left or right) 		1. The left and right direction of the right joystick is the roll stick, which is used to control the flight of the aircraft in the left and right directions. 2. Push the stick to the left, the aircraft will tilt to the left and fly to the left of the nose; pull the stick to the right, the aircraft will tilt to the right and fly to the right of the nose. 3. When the joystick is returned to the center, the forward and backward direction of the aircraft remains horizontal. 4. The larger the joystick, the faster the flight speed and the larger the tilt angle.

2.4.3 Custom Keys C1, C2

In the "Settings" > "Remote Control" > "Remote Controller Custom Key" interface, users can customize the settings of C1 and C2 keys. Please refer to Chapter 4 "4.3.3 Remote Controller Settings".

Table 2-12 C1, C2 Customizable Settings

No.	Mode	Description
1	Visual obstacle avoidance on/off	Press to trigger: Turn on/off the visual obstacle avoidance system. When this function is enabled, the aircraft will automatically hover when it detects obstacles in the field of view.
2	Gimbal recentering/45°/facing down	Press to trigger: switch the gimbal angle. Gimbal return to center: the gimbal heading angle returns to the center from the current position to be consistent with the heading of the aircraft nose, and the gimbal pitch angle is returned to the 0° direction from the current angle; Gimbal 45°: The heading angle of the gimbal returns from the current position to be consistent with the heading of the aircraft nose, and the pitch angle of the gimbal returns to the direction of 45° from the current angle; Gimbal facing down: The gimbal heading angle returns from the current position to be consistent with the heading of the aircraft nose, and the gimbal pitch angle is rotated from the current angle to a 90° direction.
3	Map/image transmission switching	Press to trigger: switch map/image transmission view.
4	Speed Mode Switch	Press to trigger: switch the speed mode of the aircraft, please refer to "1.3.2 Speed Modes".

⚠ Warning

- When the Ludicrous mode is turned on, the visual obstacle avoidance system will be turned off. It is recommended to use the aircraft in an open area and perform flight operations with caution.

2.4.4 Automatic Takeoff/Return, Pause

⚠ Warning

- If the vision system is disabled during a return flight, the aircraft will not be able to automatically avoid obstacles. Long press the pause button "II" on the remote controller to exit the automatic return-to-home function and regain control of the aircraft.
- If the Home point is not suitable for the aircraft to land (such as uneven ground, crowds, etc.), please press and hold the pause button "II" on the remote controller to pause the

automatic return-to-home, then manually assume control to land.

Important

- Short press the pause button "⏸" on the remote controller to suspend a return, short press again to resume; long press to exit the return process.

The automatic return-to-home function will only be enabled when the GNSS signal is sufficient. To manually activate the automatic return-to-home function, press and hold the return-to-home button "🏠" on the remote controller for 2 seconds. After receiving the command, the aircraft will automatically return and land at the preset home point. EVO Max 4T can use its obstacle avoidance system to detect and avoid obstacles in the route. When the aircraft is in the return-to-home state, the remote controller will be disabled, and you can short press the pause button "⏸" to reactivate it.

Table 2-13 Auto Return-to-Home Trigger Condition

No.	Trigger the RTH Scene	Description
1	Return-to-Home Instruction sent via App	App directly sends the return command to the aircraft.
2	Smart Low Power Return-to-Home	According to the current altitude and distance of the aircraft, calculate the return power. ➢ If the calculated return home battery is insufficient, it will trigger a smart low-battery return-to-home; ➢ If the calculated return-to-home battery is sufficient, a low-battery return-to-home will be triggered. By default, it waits for 6 seconds, and the App pops up a prompt to return or cancel. If there is no selection, it will return to home automatically after 6 seconds.
3	Low Battery Return-to-Home	
4	Emergency Low Power Landing	Landing on the spot does not support artificially interrupting the return flight.
5	Remote Controller Loses Connection and Return-to-Home	When the remote controller is disconnected from the aircraft, automatic return can be triggered according to the settings.

Table 2-14 Auto Return-To-Home Mechanism

Aircraft distance when the return mechanism is triggered	Return-to-Home Mechanism
≤10m from Home point	The aircraft returns to home at the current altitude.
10m< distance from the Home point≤25m	If the current aircraft altitude is lower than 20m, the aircraft will ascend to 20m altitude and return to home; If the current altitude of the aircraft is higher than 20m, the aircraft will return to home at the current altitude.

25m< distance from the Home point≤50m	If the current aircraft altitude is lower than 30m, the aircraft will ascend to 30m altitude and return; If the current altitude of the aircraft is higher than 30m, the aircraft will return to home at the current altitude.
Distance from Home > 50m	If the flight altitude is lower than the set return-to-home altitude,the aircraft will ascend to the return-to-home altitude; If the flight altitude is higher than the set return-to-home altitude, the aircraft will return to home at the current altitude.

2.4.5 Turn On/Off the Remote Controller Prompt Sound

In some scenarios, the remote controller will send out prompts, such as power-on, low battery of the remote controller, obstacle reminder, etc.

Tips

- Users can set the sound on the remote controller main interface ("Settings" > "Sound").

2.5 Autel SkyLink Image Transmission Function

EVO Max 4T is equipped with Autel SkyLink 3.0 image transmission technology, 4 image transmission antennas, 2 channels of transmitting signals, and 4 channels of receiving signals, so that the communication distance between EVO Max 4T and the remote controller can reach up to 20 kilometers.

- It supports adaptive frequency hopping transmission of multiple frequency bands, selects the optimal channel according to the electromagnetic interference situation, and has strong anti-interference ability.
- The quality of real-time transmission reaches 1080p/60fps, and it has a high transmission bit rate of 64Mbps and low-latency transmission characteristics.
- The whole link data storage adopts AES-256 encryption method to ensure that the communication data between end-to-end cannot be monitored.

Remarks

- The transmission data is based on the remote controller and comes from test data, and the test environment and conditions are different, and the data may be different.

2.6 Output Function

2.6.1 HDMI Interface

The remote controller is equipped with an HDMI interface. After connecting the HDMI interface and one end of the cable to the display screen, the remote controller interface can be output to the display screen in high definition.

Chapter 3 Smart Battery

3.1 Battery Introduction

The rechargeable lithium polymer battery used in EVO Max 4T has the characteristics of high energy density and large capacity. The battery needs to be charged with a special charging device.

3.1.1 Battery Appearance Introduction

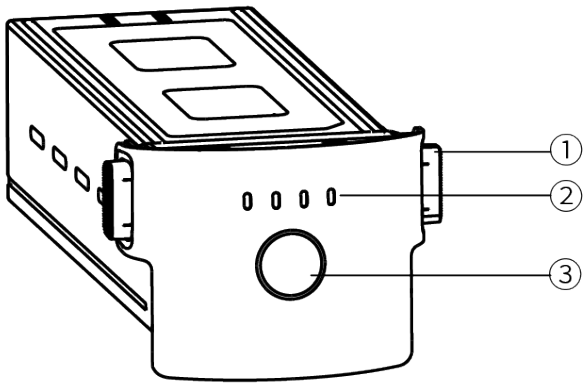


Figure 3-1 Battery Appearance

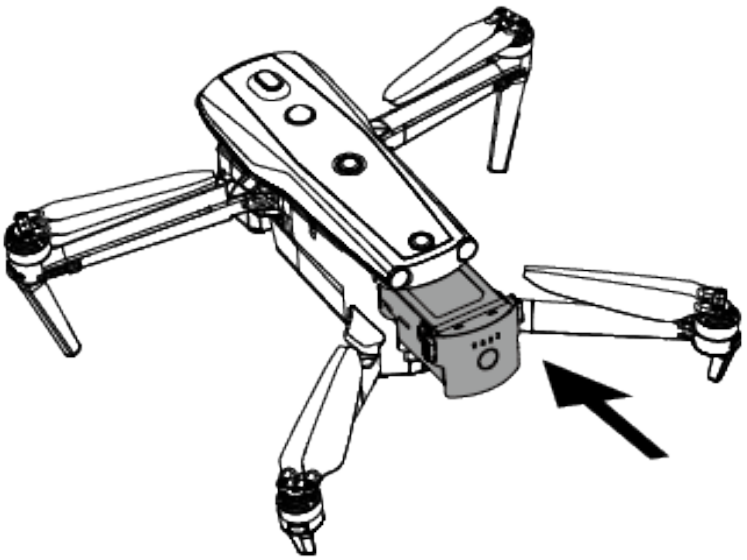
Table 3-1 Battery Appearance Description

No.	Name	Description
1	Disassembly Button	When removing the battery from the aircraft, you need to press and hold the disassembly buttons on both sides and pull to remove the battery.
2	Battery Indicator	Used to display the current battery level.
3	Power Button	Long press the power button for 3s to turn on or turn off the battery.

3.2 Battery Operation Instructions

3.2.1 Installing/Removing the Battery

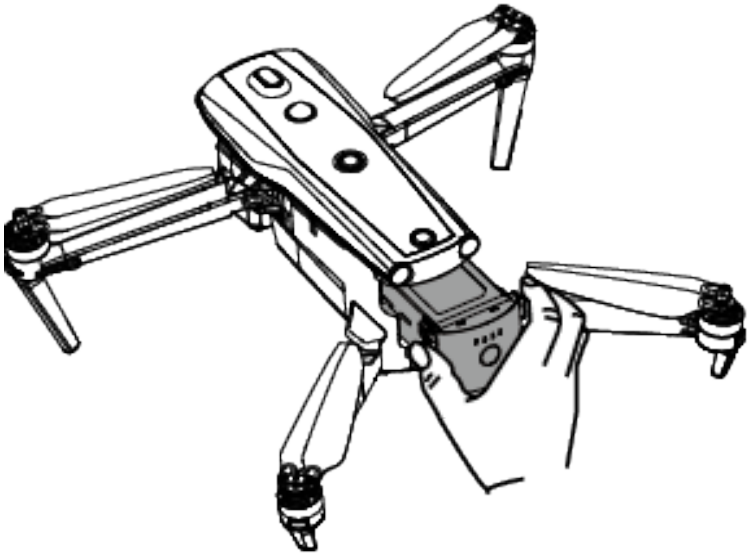
Table 3-2 Battery Installation

Step	Reference
1) Please turn off the battery before installing the battery. 2) Insert the battery into the battery compartment, and you will hear a clicking sound when the battery is in place.	

⚠ Warning

- If the battery is not installed properly, it may cause the battery to fall off during the flight, damage the aircraft or even cause personal injury.

Table 3-3 Battery Removal

Step	Reference
1) Turn off the aircraft battery before removing the battery. 2) Press and hold the buckles on both sides of the battery and slowly pull out the battery.	

3.2.2 Turn On/Off The Battery

■ **Turn On The Battery**

Before installing the battery, make sure it is turned off. After installation, press and hold the power button for 3 seconds to turn on the battery.

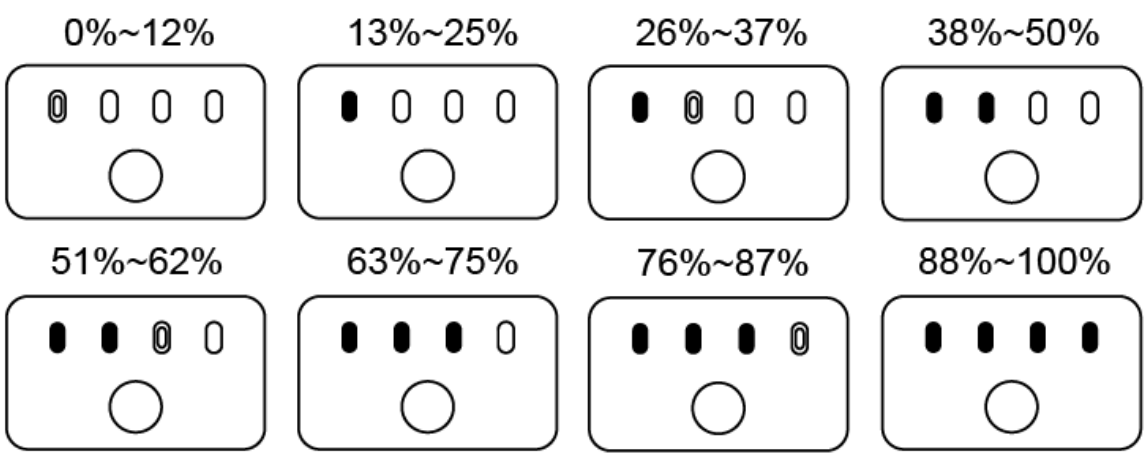
■ **Turn Off The Battery**

Press and hold the power button for 3 seconds to turn off the battery. If the battery is installed in the aircraft, LED1 and LED4 will flash 5 times to indicate that the aircraft is shutting down. Remove the battery from the aircraft after all battery level indicators are off.

3.2.3 Check Battery Level

When the battery is off, short press the power button for 1 second to check the battery level, and the LED will display the current battery level.

Table 3-4 Battery level indicator status (not charging)



■: Green Light ◎: Green Light Flashing □: Off

Tips

After the aircraft is connected to the remote controller, users can check the current battery status of the aircraft in the status notification bar at the top of the Autel Enterprise App, or jump to the "Aircraft Power" page of the Autel Enterprise App to view more information. Please refer to Chapter 4 "4.3.5 Battery Level of the Aircraft" and "4.4 Status Notification Bar" for further details.

3.2.4 Charging

Connect the charging interface of the original power adapter to the notch of the metal electrode of the battery, and connect the plug to the AC power supply (100-240V).

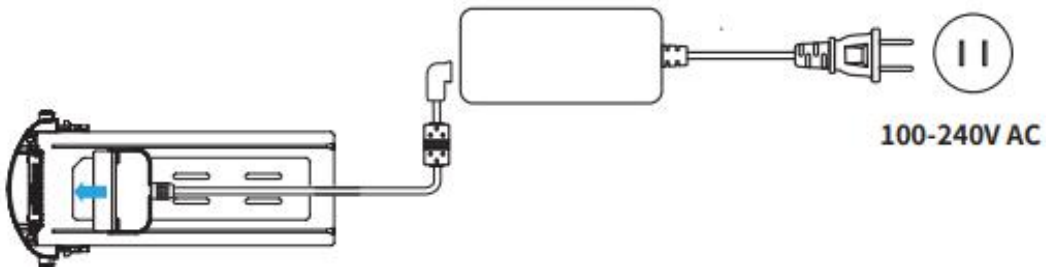
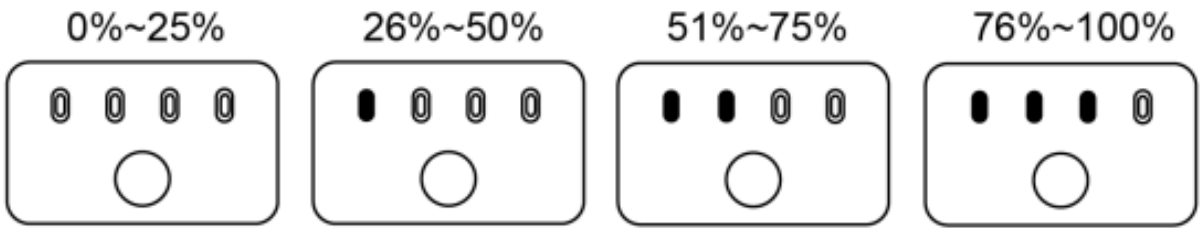


Figure 3-2 Charging

⚠ Warning

- You must use the battery and charger provided by Autel Robotics. It is forbidden to modify the battery pack and its charger, or use third-party equipment to replace it, and Autel Robotics will not be responsible for any consequences caused by charging equipment that is not officially provided by Autel Robotics.
- When the battery charger is not in use, it should be disconnected from the aircraft battery and power supply.
- Wait until the battery cools down to room temperature before charging. If the battery is connected to the charger immediately after the flight, the over-temperature protection function may be automatically activated, preventing the battery from charging until the battery is completely cooled.

Table 3-5 Battery level indicator status (while charging)



■: Green Light ▯: Green Light Flashing

Remarks

- The aircraft and remote controller batteries should always be fully charged before flying.
- It takes about 90 minutes for the aircraft battery to be fully charged, and about 120 minutes for the remote controller to be fully charged.
- After charging is complete, please disconnect the charger from the aircraft battery/controller.

3.3 Battery Functions

3.3.1 Battery Self-Heating Function

In a low temperature environment, EVO Max 4T supports battery self-heating function, as shown in **Table 3-6**.

Table 3-6 Battery Self-Heating

Name	Description
Battery self-heating (Connected to aircraft and in low temperature state)	When batteries are installed in the aircraft and the battery power is turned on, if the battery temperature is lower than 15°C, the battery self-heating function will be activated. When the aircraft takes off, the self-heating function of the battery will be automatically turned off.
Battery self-heating (When not connected to the aircraft, it needs to be started manually)	If the battery is not connected to the aircraft, short press the power button and then long press the power button for 3 seconds to activate the battery self-heating function to keep the battery temperature between 15°C and 20°C for 10 minutes.
Exit the battery self-heating function	During the battery self-heating process, if you short press the power button, then long press the power button for 3 seconds, you can exit the battery self-heating function.

When the battery is in the state of self-heating and heat preservation, the blinking status of the battery power indicator is shown in **Table 3-7**.

Table 3-7 Battery level indicator status

No.	Description
1	LED1, LED3 and LED2, LED4 flash alternately in groups, indicating that it is heating.
2	The 4 LEDs flash at the same time, indicating that it has entered the heat preservation state.
■: Green Light ▯: Green Light Flashing □: Off	

⚠ Warning

- When the battery temperature is lower than -10°C, the aircraft will not be allowed to take off. It is recommended to wait until the self-heating is over before operating.
- When the ambient temperature of the battery is lower than 5°C, the internal resistance of the battery will increase and the voltage will drop suddenly due to the low temperature, which will reduce the usable capacity of the battery and reduce the battery life. In a low temperature environment, please make sure to fully charge the battery before using it.
- If the power is lower than 40%, it is not recommended to take off. When the battery power is low, it is difficult to activate the battery, which will reduce the safety of flight.

- After taking off and the above conditions are met, when the Autel Enterprise App prompts a low battery alarm, it is recommended to immediately choose a suitable place for landing operations. During the automatic landing process, the aircraft can still be controlled by the remote controller.
- In the extreme cold environment, even if the self-heating function is adopted, the battery temperature may still not reach the usable temperature, please add insulation measures during the heating process.
- In order to get the best performance from the battery, it is recommended to keep the battery temperature between 15°C to 35°C before flying.
- In a low temperature environment, the self-heating time of the battery may be longer. It is recommended that the user keep the battery warm in advance to shorten the self-heating time.

3.3.2 Additional Features

■ Low Battery Protection

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

■ Charging Temperature Detection

If the temperature is lower than 5℃ (41℉) or higher than 45℃ (113℉) during charging, the battery will stop charging.

■ Current Protection

When the charging current is too high, the battery will stop charging.

■ Overcharge Protection

Charging will stop automatically when the battery is fully charged.

■ Balance Protection

The voltage of each battery cell is kept balanced to maximize the performance of the battery.

■ Short Circuit Protection

Once a short circuit is detected, the power supply will be cut off.

■ Power Saving Mode

The battery will shut down after 30 minutes of inactivity.

■ Communication

When using the battery, the aircraft is continuously synchronized with the battery to provide real-time information, including voltage, capacity, current, temperature, and more.

■ Ultra Low Power Mode

When the battery is idle for 12 hours and the charge is less than 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.

Table 3-8 Other Battery Indicator Warning Instructions

LED1	LED2	LED3	LED4	Warning References
○	◎	○	○	Charging temperature is too high or too low.

○	○	◎	○	The charging current is too high and has caused a short circuit.
○	○	○	◎	An overcurrent, overload, or short circuit problem occurred during discharge.

◎: Light Flashing ○: Off

3.4 Storage and Handling of Batteries

3.4.1 Battery Storage

When storing, keep the battery away from water or heat sources. Batteries should be stored at room temperature (ideally 22℃ to 28℃ (72℉ to 82℉)) in a dry, well-ventilated area.

Tips

- Keep away from flammable and explosive items during charging.
- Do not disassemble or puncture the battery in any way.
- If the battery temperature is too high during flight, it is recommended to return to the flight as soon as possible.
- Batteries should be stored out of the reach of children and pets.
- Do not store batteries in direct sunlight or near sharp objects, water, metal or reactive chemicals.
- Storing batteries in extreme temperatures will shorten their lifespan. If the battery is not used for more than 1 day, it should be stored at 30°C (86°F). Otherwise, battery damage or failure may result.
- If left idle for a long time, the service life of the battery will be shortened.

3.4.2 Battery Self-Discharge Protection

If the battery is stored in a high temperature environment or not used for 6 days with a high power level, the self-discharge protection will activate. The battery will automatically discharge to a safe level (this is the default setting) and the discharge process takes 2-3 days. Although the battery has no indication of a self-discharge cycle, you may notice that the battery is slightly warm, which is normal.

3.4.3 Battery Replacement Standards

1. There are obvious bulges, leakage, and damage on the battery surface.
2. After the number of cycles reaches 300, it is recommended to replace the battery with a new one.
3. After 2 consecutive standard charge and discharge operations (please refer to "6.4.3

Standard Charging and Discharging Process" in Chapter 6 Firmware update and Maintenance), if the abnormal battery still cannot be repaired, it is recommended to replace it with a new battery.

3.4.4 Battery Recycling

1) Fill the insulated bucket with 5% salt water, and then completely immerse the battery to be discarded in the insulated bucket for more than 48 hours until the battery is completely discharged.
2) It is recommended to refer to the "Battery Safe Operation Guidelines" for recycling to avoid environmental pollution.

Chapter 4 Autel Enterprise App

4.1 Software Introduction

Autel Enterprise App is a flight control software developed by Autel Robotics for enterprise applications. The software integrates a variety of professional functions to quickly get started and improve efficiency; through a variety of the built-in intelligent flight functions, it can realize highly intelligent aircraft operations and empower industry applications. Cooperating with EVO Max 4T, it can be widely used in public safety, inspection and other industries. Through the Autel Enterprise App, users can choose various mission modes such as waypoint mission, rectangular mission, polygonal mission, and oblique photography.

4.2 Home Page Guide

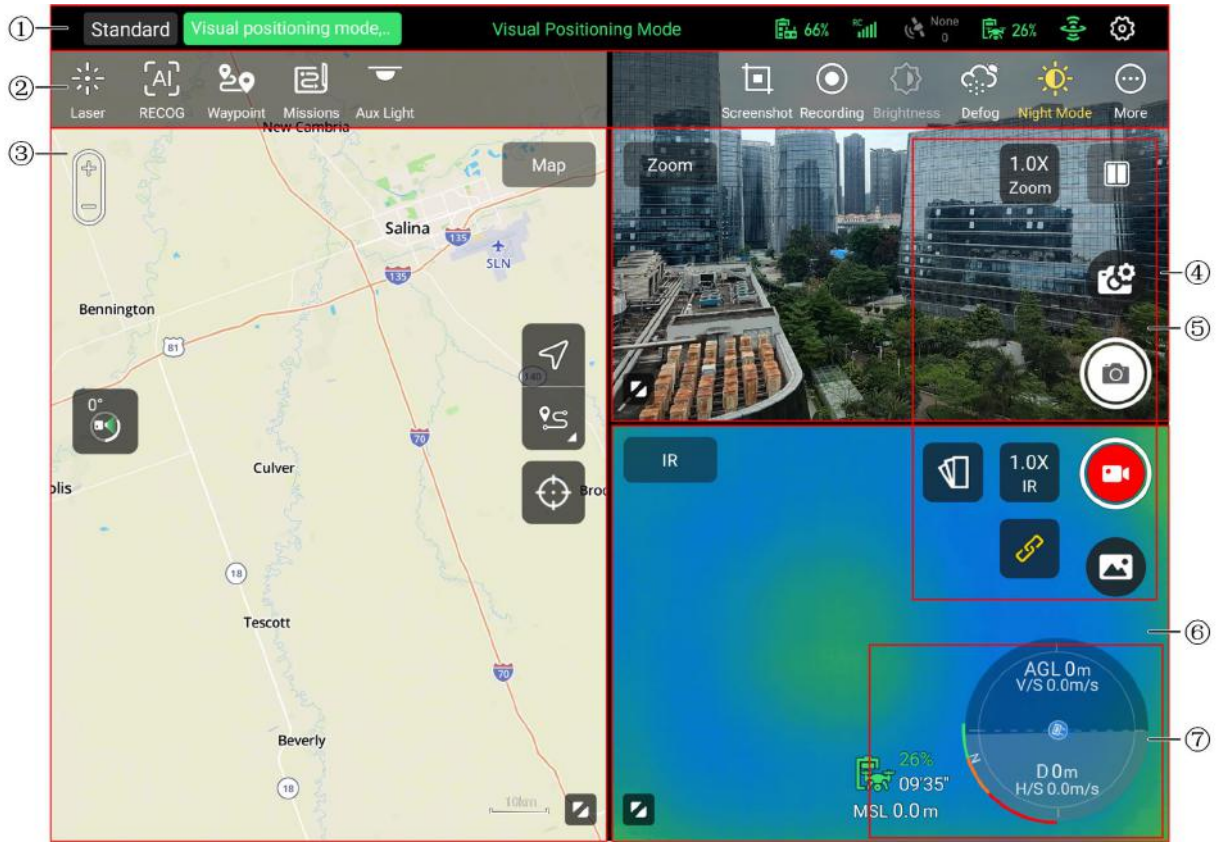


Figure 4-1 App Main Interface

Table 4-1 App Main Interface Details

No.	Name	Description
1	Status Notification Bar	Display aircraft, remote controller, flight speed modes, alarm and other information, see "4.4 Status Notification Bar" for details.

2	Shortcut Toolbar	It is used to facilitate users to quickly enable a certain function or enter a certain route mission, see "4.5 Shortcut Toolbar" for details.
3	Map Preview	Click to enter the "Map" interface, see "4.6 Entering the "Map" Interface" for details.
4	Zoom Preview	Click to enter the "Zoom Camera" interface, see "4.7 Zoom Camera Interface" for details.
5	Camera Function Area	See "4.9 Camera Menu" for details.
6	Infrared Preview	Click to enter the "Thermal Camera" interface, see "4.8 Thermal Camera Interface" for details.
7	Attitude Ball	See "4.10 Attitude Ball" for details.

Table 4-2 Button Definitions

No.	Button	Name	Description
1		Orientation Lock	When changing the orientation of the remote controller, the position of the map will change accordingly. Click this button to lock the direction of the map of the current remote controller.
2		Position	Click this button and a dialog box will pop up, allowing you to choose to locate the remote controller, the Home Point location, the aircraft location, or view the entire route.
3		Fullscreen	In the lower right corner of each window preview, click this button to enter the corresponding page.
4		Zoom In	Click this button to zoom in the map.
5		Zoom Out	Click this button to zoom out on the map.
6		Zoom	The maximum support for hybrid zoom is 160×.
7		Color Palettte	Click this button, and the drop-down list of "Color Palette" will pop up, and you can drag up and down to select one type.
8		Infrared Zoom	Can support infrared zoom up to 16×.
9		Linked Zoom	When the multi-screen function is turned on and zoom and infrared are selected, click this button, and when zooming, the images of the zoom camera and the Thermal Camera will be enlarged or reduced synchronously. In order to ensure a consistent picture, the zoom camera needs to be adjusted to 2.4 times before the Thermal Camera starts to zoom.

Tips

- Swipe up anywhere in the "Zoom" window preview and "Infrared" window preview to

enter the full-screen interface; if you slide down, the original interface will be restored.

4.3 Settings Page (Overview)

On the main interface of Autel Enterprise App, click " "in the upper right corner to enter the "Settings" interface.

4.3.1 Flight Control Parameter Settings

Click" " to enter the "Flight Control Parameter Setting" interface, the user can set the parameters for the aircraft, as shown in **Figure 4-2**.

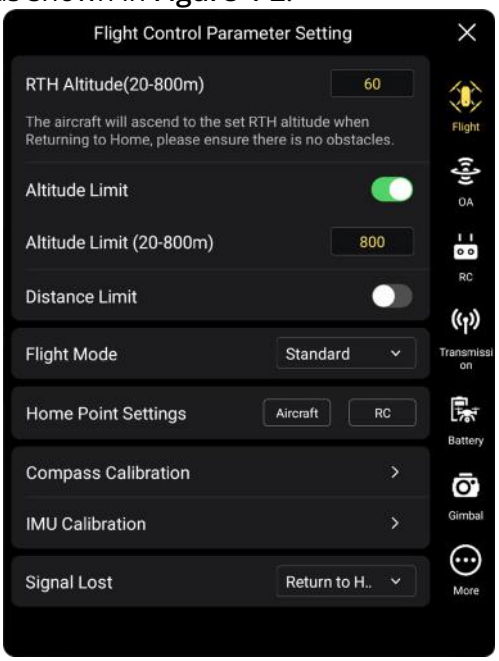


Figure 4-2 "Flight Control Parameter Settings" interface

References

■ **Set Return-to-Home altitude**

Click the "RTH Altitude" edit box and enter the value. When returning to home, the aircraft will rise to the Return-to-Home altitude.

■ **Turn on/off the Altitude Limit**

Click the button on the right side of "Altitude Limit" to turn on or off the Altitude Limit function.

- If this function is turned on, enter the altitude limit value in the edit box below the altitude limit (20-800m), and the aircraft will rise to the maximum altitude.
- If this function is turned off, the aircraft can keep ascending according to the user's operation until the power is exhausted.

■ Turn on/off the distance limit function

Click the button on the right side of "Distance Limit" to enable or disable the distance limit function.

- If this function is turned on, enter the limit value in the edit box of "Limit (20-5000)" that pops up below, and the aircraft will fly as far as this distance.
- If this function is turned off, the aircraft can keep moving according to the user's operation until the battery is exhausted.

⚠ Warning

- Using the aircraft in an unsuitable flight environment (such as a flight altitude exceeding 120 meters) may have legal risks. Please comply with local laws and regulations when flying the aircraft. For details, see "5.2 Flight Precautions" in Chapter 5 First Flight.
- Reasonably setting the altitude limit and distance limit can increase the safety factor.

■ Set flight speed mode

Click the "Speed Mode" drop-down list, and then select the appropriate mode from Smooth, Standard, and Ludicrous, that is, set the default speed mode every time you open the Enterprise App. For the meaning of each mode, please refer to "1.3.2 Speed Modes".

■ Set the Home point location

Click on the right side to select the home point.

- If "Aircraft" is selected, the Home Point is the position where the aircraft took off this time.
- If "RC" is selected, the Home Point is the current position of the remote controller.

■ Calibrate Compass, IMU

Please refer to "6.2.1 Compass Calibration" and "6.2.2 IMU Calibration" in Chapter 6 Firmware Update and Maintenance.

■ Set Lost Action

Click the drop-down list of "Lost Action" to set the aircraft actions when disconnected. Lost action refers to the action that the aircraft will perform when the aircraft is disconnected from the remote controller.

- If you select "RTH", when the aircraft disconnects, the aircraft will automatically return to the home point.
- If "Hover" is selected, the aircraft will hover at the current position when the aircraft disconnects.
- If "Land" is selected, the aircraft will land at the current position when the aircraft disconnects.

4.3.2 Obstacle Avoidance Settings

Click " " to enter the "OA Settings" interface, the user can set the OA system, stop distance, alarm distance, radar display and obstacle sound alert of the aircraft, as shown in **Figure 4-3**.

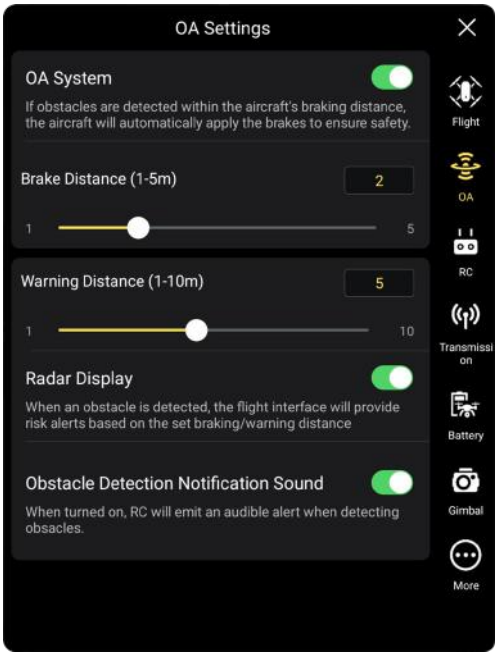


Figure 4-3 "Obstacle Avoidance Settings" interface

References

■ Turn on/off the obstacle avoidance system

Click "OA system" to turn on/off the Obstacle Avoidance system. If OA is enabled, the user can set the stop distance. Enter value in the edit box on the right of stop distance (1-10m), or adjust the value by sliding the buttons below left and right. If the aircraft detects obstacles, it will stop at the stop distance as set.

⚠ Warning
● If the obstacle avoidance system is turned off, when the aircraft encounters an obstacle, it will not stop.

■ Set Warning Distance

Enter values in the edit box on the right of "Warning Distance (1-20m)", or slide the buttons below left and right to adjust the values.

■ Turn on/off Radar Display

Click the button on the right side of "Radar Display" to enable or disable this function, and the flight interface will display/not display reminders when reaching the warning distance, if this function is disabled, the reminder will turn off accordingly.

■ Turn on/off the obstacle sound prompt function

Click to enter the button on the right side of "Obstacle Detection Notification Sound" to enable or disable this function. When this function is enabled, the aircraft will make a sound notification when detecting obstacles.

4.3.3 Remote Controller Settings

Click " " to enter the "RC Settings" interface, the user can set the command stick mode, EXP, and also support the calibration of the remote controller, as shown in **Figure 4-4**.

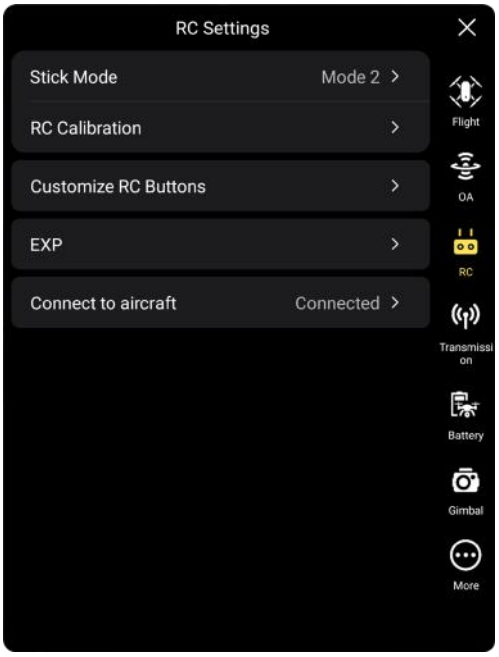


Figure 4-4 "RC Settings" interface

References

■ Set Command Stick Mode

After clicking "Stick Mode", select one of Mode 1, Mode 2, and Mode 3. For the differences between the three joystick modes, please refer to "2.4.2 Set Command Stick Modes" in Chapter 2 Remote Controller.

■ Remote Calibration

Please refer to "2.2.7 Remote Controller Calibration" in Chapter 2 Remote Controller.

■ Set Custom C1/C2 Buttons

Click "Custom RC Buttons", and then click the drop-down list of C1 and C2, and select the customized function according to the needs.

■ Set the EXP of the remote controller

After clicking "EXP", drag the coordinate system curves of "Ascent", "Turn Right", "Forward/Move right", or input coefficients (range 0.2-0.7) in each edit box. The X-axis is the physical output of the joystick, and the Y-axis is the logical output of the joystick, that is: the X-axis represents the movement generated by the current joystick move, and the Y-axis represents the actual response strength of the current aircraft. When the coefficient is 0.2, the slope of the curve increases gradually, which is convenient for fine-tuning; when the coefficient is 0.7, the slope of the curve gradually decreases, and the aircraft responds strongly when the joystick is slightly moved. Click "Reset EXP" to reset the EXP parameters.

■ Connect to Aircraft

- Connecting to the aircraft: If the aircraft is not currently connected, click "Connect to the aircraft", and then double-click the power button of the aircraft according to the pop-up notification to complete the frequency pairing between the remote controller and the aircraft.
- Disconnect: If the aircraft is currently connected, click "Connect Aircraft", a prompt box will pop up, click "Disconnect".

4.3.4 Image Transmission Settings

Click " " to enter the "Image Transmission Settings" interface, the user can set the Image Transmission Mode, Split Screen Effect, as shown in the figure below.

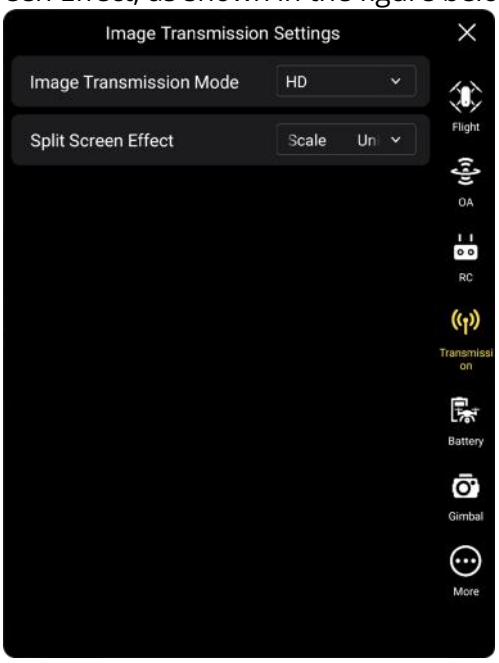


Figure 4-5 "Image Transmission Settings" interface

References

■ Set Image Transmission Mode

Click the drop-down list of "Image Transmission Mode" and select smooth or HD according to your needs.

■ Set Split Screen Effect

Click the "Split Screen Effect" drop-down list, and choose Uniform Scale or Fit the Screen according to your needs.

- Uniform Scale: In dual-screen mode, the image transmission screen is proportionally reduced.
- Fit the screen: In the dual-screen mode, the picture transmission screen is stretched to cover the screen.

Tips

- Setting the Split Screen Effect is only applied in dual-screen mode, please refer to "4.9 Camera Menu" for split-screen operation.

4.3.5 Battery Level of the Aircraft

Click " " to enter the "Battery Level of the Aircraft" interface, the user can view the basic information of the current aircraft battery, and also supports setting the battery alarm threshold, as shown in **Figure 4-6**.

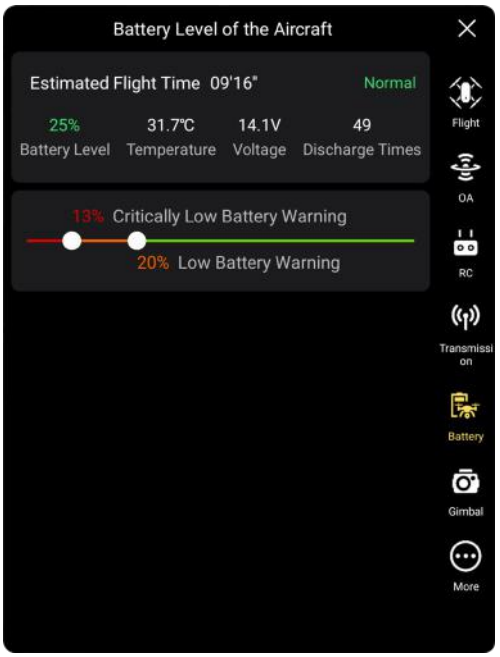


Figure 4-6 Battery Level of the Aircraft Interface

Table 4-3 Power Parameter Details

Parameter	Description
Battery Level	Extreme low battery alarm threshold ≤ battery level ≤ low battery alarm threshold, there will be an orange warning. If the battery level is less than or equal to the critical low battery alarm threshold, there will be a red warning.
Temperature	The temperature range is -10°C-70°C. 6°C ≤ battery temperature ≤ 69°C, the temperature is normal. -10°C ≤ battery temperature ≤ 5°C, the temperature is low, and there will be an orange warning. The battery temperature is less than or equal to -10°C, and the temperature is too low, there will be a red warning. The battery temperature is ≥70°C, and the temperature is too high, there will be a red warning.
Voltage	Normal voltage range: 10.8-17V, when it exceeds the normal range, there will be a red warning.

Discharge Times	The normal range of the number of discharges is 0-200 times, and when it exceeds the normal range, there will be a red warning.

References

■ View basic battery information

Please refer to the parameters in **Table 4-3** to check the basic information of the battery, so as to deal with it in time when the battery condition is not good.

■ Set the battery warning threshold

Swipe left or right to set warning thresholds for low battery and critical low battery.

4.3.6 Gimbal Settings

Click "" to enter the "Gimbal Settings" interface, the user can set the Gimbal Pitch Sensitivity, the Extended Pitch Angle, etc., as shown in **Figure 4-7**.

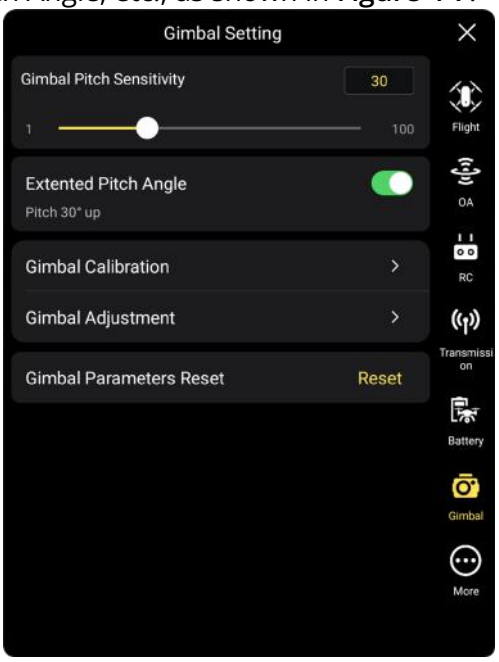


Figure 4-7 "Gimbal Settings" Interface

References

■ Set the Gimbal Pitch Sensitivity

Enter the value in the edit box on the right side of "Gimbal Pitch Sensitivity", or move the slider left or right to adjust the value. The gimbal pitch axis speed controls how fast the gimbal moves up or down.

■ Enable/disable gimbal pitch extension

Using the "Extended Pitch Angle", the gimbal can be rotated upwards by 30 degrees, otherwise it cannot be rotated upwards, and only the heads-up view is maintained.

■ Gimbal Calibration

When there is an abnormality in the gimbal, click "Gimbal Calibration", and then click the "Calibrate" button, and the gimbal will automatically start calibrating.

■ Gimbal Adjustment

When the position of the gimbal tilts, click "Gimbal Adjustment" and click the buttons

under the functions to adjust the gimbal, so that the horizontal and vertical axes on the screen remain aligned to the reference objects on the image transmission screen.

■ **Reset gimbal parameters**

Click the "Gimbal Parameters Reset" button, and then click the "Confirm" button to reset the gimbal parameters.

4.3.7 More

Click " " to enter the "More" interface, the user can set the units, lighting, visual positioning, language, etc., as shown in **Figure 4-8**.

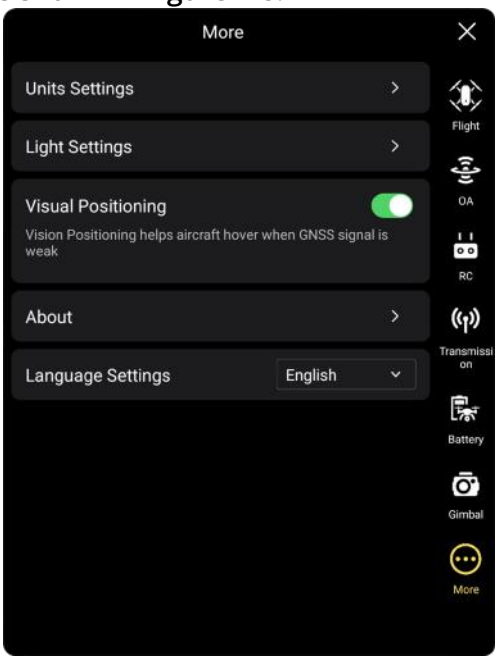


Figure 4-8 "More" interface

References

■ **Units Settings**

Click "Units Settings", and then click the drop-down lists of "Speed / Distance Units", "Area Units", "Temperature Units", and "Coordinates" to set the unit according to your needs.

■ **Light Settings**

Click "Light Settings" to set "Stealth Mode", "Night Mode", and toggle the "Auxiliary Bottom Light"

➢ **Turn on/off stealth mode**

Click "Stealth mode" to turn on or off stealth mode. If this function is enabled, the arm lights and beacon will be turned off by default. When flying at night, please turn on the beacon to ensure flight safety.

➢ **Turn on/off the beacon**

Click "Beacon" to turn on or off the beacon on the top of the fuselage.

Warning

- When flying in a low light environment, please turn on the beacon to ensure flight safety.

➢ **Set the Auxiliary Bottom Light**

Click the drop-down list of "Auxiliary Bottom Light" and select Auto, On, or Off. If Auto is selected, the down-view light will be automatically adjusted according to the surrounding brightness; if On is selected, the auxiliary light is always on by default; if Off is selected, the auxiliary bottom light will be turned off by default.

■ Turn on/off the visual positioning function

Click the button on the right side of "Visual Positioning" to enable the visual positioning function. When the GNSS signal is poor, the aircraft will hover.

Tips

- To enable visual positioning is a must to enter Visual Positioning Mode, please refer to "1.3.1 Flight Modes" for more information.

■ View Version Information

Click and enter the "About" interface, you can view the app and firmware version, serial number, etc., supporting version updates at the same time.

■ Language Settings

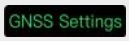
Click the "Language Settings" drop-down list, to select from Chinese, English, or other languages.

4.4 Status Notification Bar

Figure 4-9 Status Notification Bar

Table 4-4 Status Notification References

No.	Icon	Meaning	Description
1	Standard	Speed Mode Display	Speed mode display and switch button, click to switch between Smooth, Standard, and Ludicrous modes. For further details, please refer to "1.3.2 Speed Modes".
2	The compass is abnormal	Status / Alarm	Display current aircraft faults: ➢ Gray means the remote controller is not connected to the aircraft. ➢ Orange indicates a medium-level warning, the aircraft will not be prohibited from taking off, but should pay attention to flight safety. ➢ Red means a high-level warning, the aircraft will be prohibited from taking off, and the user can take off only after the user solves the fault.

3		GNSS Settings	Displays the current flight mode. There are 3 modes: GNSS mode, Visual Positioning mode, and ATTI mode. For details, see "1.3.1 Flight Modes" for details.
4		No SD Card	Indicates that there is no microSD card installed in the current aircraft.
5		Remote Controller Battery	Display the current battery status of the remote controller.
6		Remote Controller Signal	Displays the current connection signal of the remote controller.
7		GNSS Status	1. Click the icon to display the detailed signal status of GNSS. 2. When the GNSS signal is 3-5 grids, the GNSS positioning signal is strong. 3. When the GNSS signal is 1-2 grids, the GNSS positioning signal is weak. 4. When there is no GNSS signal, the GNSS positioning signal shows N/A. 5. Displayed as N/A when the aircraft is not connected.
8		Aircraft Power	Display the current battery status of the aircraft.
9		Obstacle Avoidance	Tap to quickly turn on/off the obstacle avoidance mode.
10		Settings	Click to enter the basic parameter settings, see "4.3 Settings Page (Overview)" for details.

4.5 Shortcut Toolbar

The "Shortcut Toolbar" is displayed on the top of the main interface of the Autel Enterprise App, which is used to facilitate users to quickly activate a certain function or enter a certain route mission. Users can long press and drag the shortcut functions in the "Shortcut Toolbar" to customize the sorting. At the same time, it also supports clicking "More" to enter the "Toolbox" to add more shortcut functions.

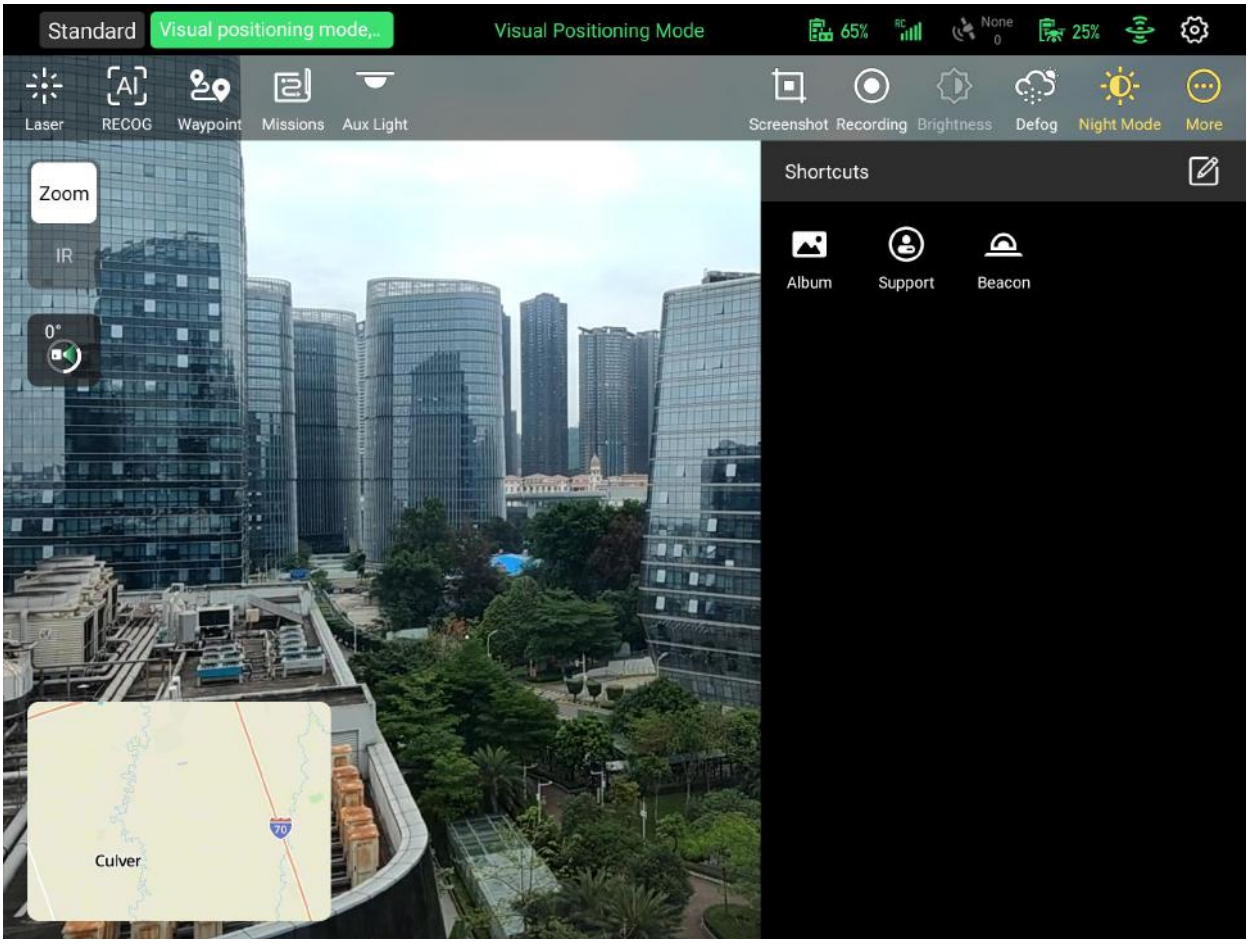


Figure 4-10 Shortcut Toolbar

Table 4-5 Shortcut Toolbar Details

No.	Icon	Meaning	Description
1		Laser Ranging and Positioning	After this function is turned on, the distance and altitude from the aircraft to the target point in the center of the lens will be automatically detected via laser.
2		AI Recognition	Click this button to intelligently identify the target object.
3		Waypoint Mission	Click this button to enter the "Waypoint Mission" interface.
4		Missions	Click the "Missions" button to enter the "Mission Library", where you can query, edit, collect and delete previously saved historical flight missions.
5		Auxiliary Light	After this function is turned on, the auxiliary light will be turned on, which is convenient for night work. When the ambient light is insufficient when the aircraft is descending, it can assist in landing.
6		Screenshot	Click this button to capture the current screen in a screenshot.
7		Recording	Click this button to start recording the screen.

8		Camera Brightness	Click this button to slide left and right to adjust the brightness of the camera.
9		Defog	Click this button to make the shooting or recording scene more transparent and emphasize the color, which is used to eliminate the "fogging phenomenon" in the picture or the lack of picture clarity caused by smog.
10		Night Mode	Click this button to enter night shooting mode. Even when shooting in a low-light environment, the picture will remain clear.
11		More	Click the "More" button to enter the "Toolbox" function, and you can customize and add more shortcut functions.
12		Edit Shortcuts	Click this button to add functions from the toolbox to the "Shortcut Toolbar" or move the functions in the "Shortcut Toolbar" to the Toolbox.
13		Album	Click the "Album" button to view and delete the local album.
14		Support	Click this button to enter the "Service Center" interface.
15		Beacon	Click this button to turn on the Beacon.
16		Gimbal 0 degree	Click this button, the gimbal returns to the horizontal centering state.
17		Gimbal 45 degrees	Click this button, and the gimbal rotates obliquely downward, forming an angle of 45° with the horizontal direction.
18		Gimbal 90 degrees	Click this button, the gimbal rotates directly downward, forming an angle of 90° with the horizontal direction.

4.6 Entering the "Maps" Interface

In the lower right corner of the "Maps" window preview on the main interface of the App, click " ", or click "Maps" in the lower left corner after entering the "Zoom Camera" interface and "Thermal Camera" interface to enter the "Maps" interface.

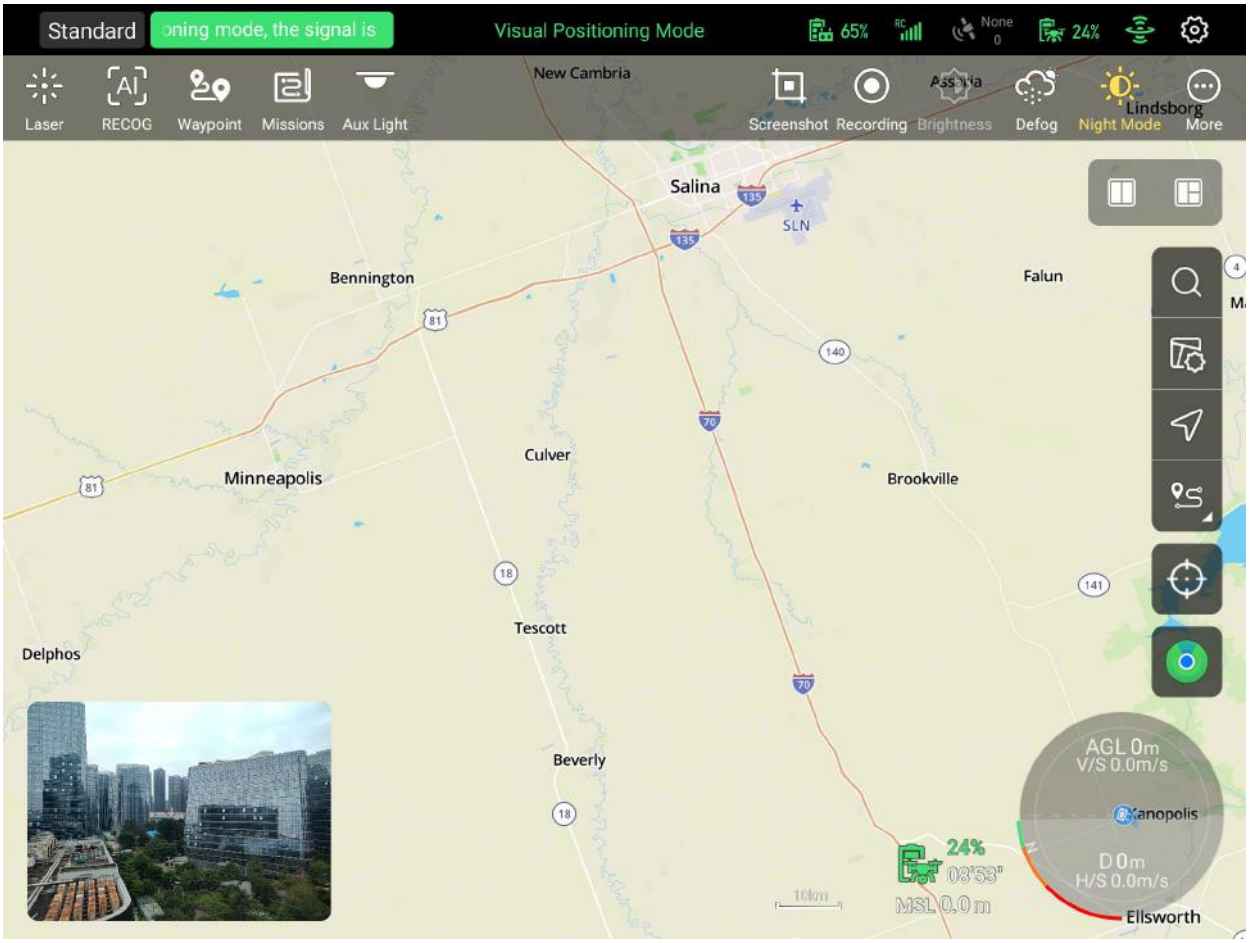


Figure 4-11 Entering the "Maps" interface

Table 4-6 Maps Interface Details

No.	Icon	Meaning	Description
1		Search Map	Click this button, you can enter the required location Name in the "Search Map" edit box, and then select the correct location, and the specific location will be searched.
2		Map Management	Click this button to adjust the map style to a general map or a hybrid map, and also support setting display/clear flight tracks. Standard map: 2D map. Hybrid map: Satellite and 2D map combined.
3		Orientation Lock	When changing the orientation of the remote controller, the position of the map will change accordingly. Click this button to lock the direction of the map of the current remote controller.
4		Positioning	Click this button, and a dialog box will pop up, where you can choose to locate the position of the remote controller, the position of the return point, the position of the aircraft, or view the entire route.
5		Re-center	If the map is moved from the current positioning point to another location, this button will appear on the right,

			click this button, and the map will quickly return to the current positioning point.
6		Find Aircraft	When the plane is lost, click this button to query the location information of the lost aircraft.

4.7 Zoom Camera Interface

In the lower right corner of the "Zoom" preview on the main interface of the App, click "" to enter the Zoom Camera interface. The user can also click "Zoom" to switch the zoom camera on the "Thermal Camera" (IR) interface, and the parameters of the zoom camera can be set as shown in **Figure 4-12**.

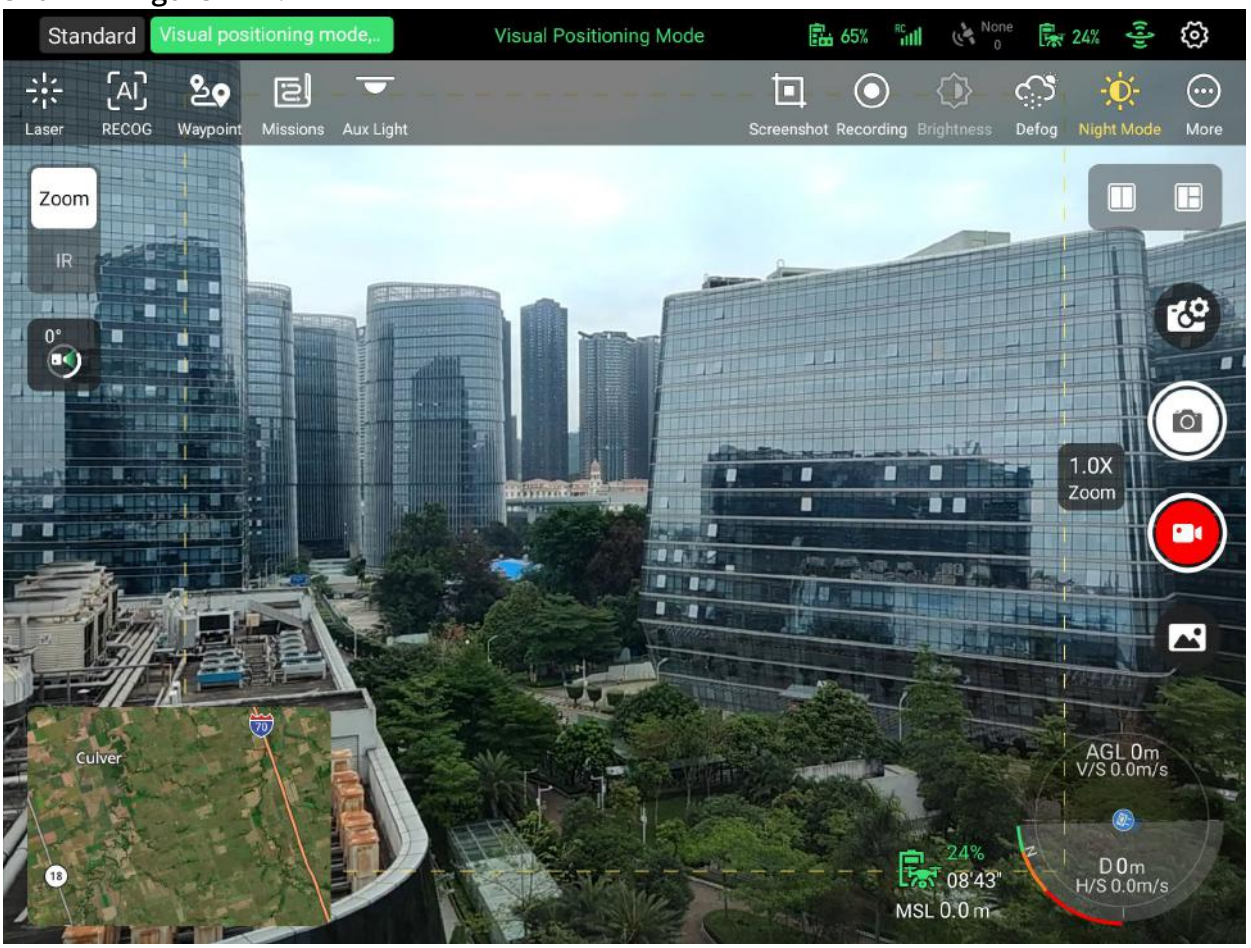


Figure 4-12 Zoom Camera Interface

Table 4-7 Zoom Camera Settings Detail

No.	Icon	Meaning	Description
1	1.0X Zoom	Visible Light Zoom	The maximum hybrid zoom is 160×.

References

- **Adjust the zoom factor**

Click "1.0X Zoom", the zoom factor setting pops up, drag up and down or click the number on the left to set the zoom factor according to the needs, and the object to be photographed can be enlarged or reduced.

4.8 Thermal Camera Interface

In the lower right corner of the "Infrared" (IR) window preview on the main interface of the app, click "" to enter the Thermal Camera interface. The user can also switch the Thermal Camera by clicking "Infrared" on the "Zoom Camera" interface, and the detailed parameters of the thermal camera can be set as shown in **Figure 4-13**.

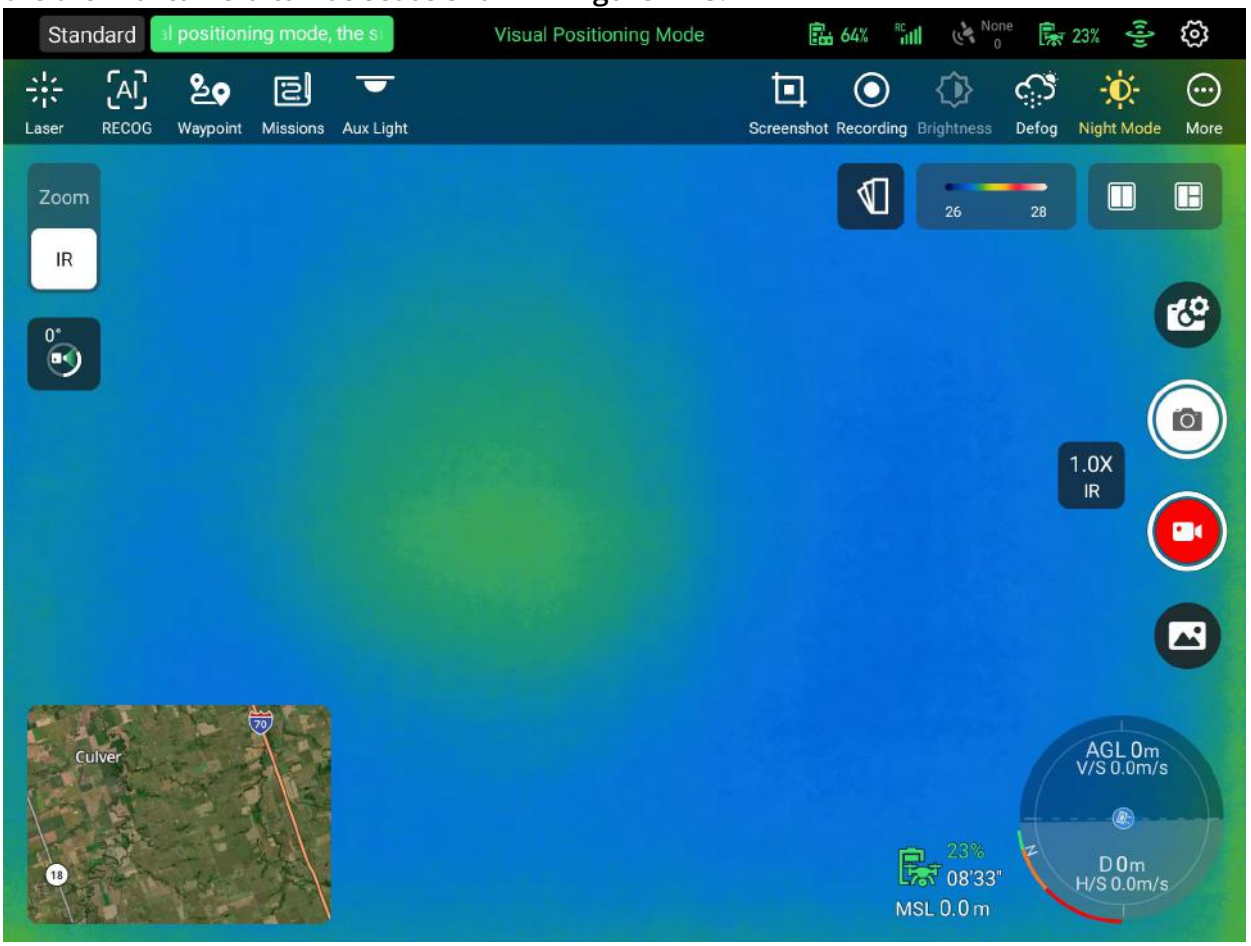


Figure 4-13 Thermal Camera

Table 4-8 Thermal Camera Setting Details

No.	Icon	Meaning	Description
1		Thermal Color	Click this button to open the thermal color palette settings, allowing the user to adjust for maximum visibility.
2		Infrared Settings	The numbers on the button indicate the minimum and maximum values of the current Thermal Camera radiometric measurement, click to enter the "Infrared Settings" interface.

3		Radiometric Measurement Mode	Supports high gain mode (-20℃ to 150℃) or low gain mode (0℃ to 550℃).
4		FFC Calibration	FFC, Flat-Field Calibration, click to calibrate. After calibration, the image quality of thermal imaging will be optimized, and temperature changes will be easier to observe.
5		Infrared Zoom	Can support infrared zoom up to 16×.

References

■ Set different color palettes

Click " "and drag up and down to select a color setting.

■ Infrared Settings

Click " " to enter the Infrared Settings interface.

■ Set image mode

On the Infrared Settings interface, click "Image Mode" to set Auto or Manual mode. If Manual mode is set, the user can adjust the "Contrast" and "Brightness" by entering a value or clicking the numbers on the left and right sides.

■ Enable/disable radiometric measurement function

On the "Infrared Settings" interface, click "Radiometric Measurement" to enable or disable the radiometric measurement function. If this function is enabled, settings including image enhancement, isotherm, emissivity, and temperature alarm functions can be set. If this function is turned off, both "Radiometric Measurement Mode" and "FFC Calibration" are unable to be configured.

➢ **Enable/disable image enhancement**

On the "Infrared Settings" interface, click "Image Enhancement" to enable or disable the image enhancement function. If enabled, you can drag left and right, or enter the image enhancement value to adjust. The larger the value, the clearer the image details.

Remarks

- Auto mode will only be displayed when White Balance, Shutter priority, and ISO are all set to auto.

➢ **Set the Isotherm**

Click "Isotherm" to customize the radiometric measurement interval.

➢ **Set Emissivity**

Enter a value on the right side of "Emissivity" or drag left or right to adjust the value.

➢ **Enable/disable temperature alarm function**

Click the "Temperature Alarm" function to enable or disable the temperature alarm.

■ Set radiometric measurement mode

Click " ", different radiometric measurement modes can then be set, including high gain mode (-20℃ to 150℃) or low gain mode (0℃ to 550℃).

■ Calibrate FFC function

Click " ", to calibrate the FFC function.

■ Adjust the infrared zoom factor

Click "1.0X IR", the infrared zoom setting will pop up, users can drag up or down to zoom in or out on the picture captured by the Thermal Camera.

4.9 Camera Menu

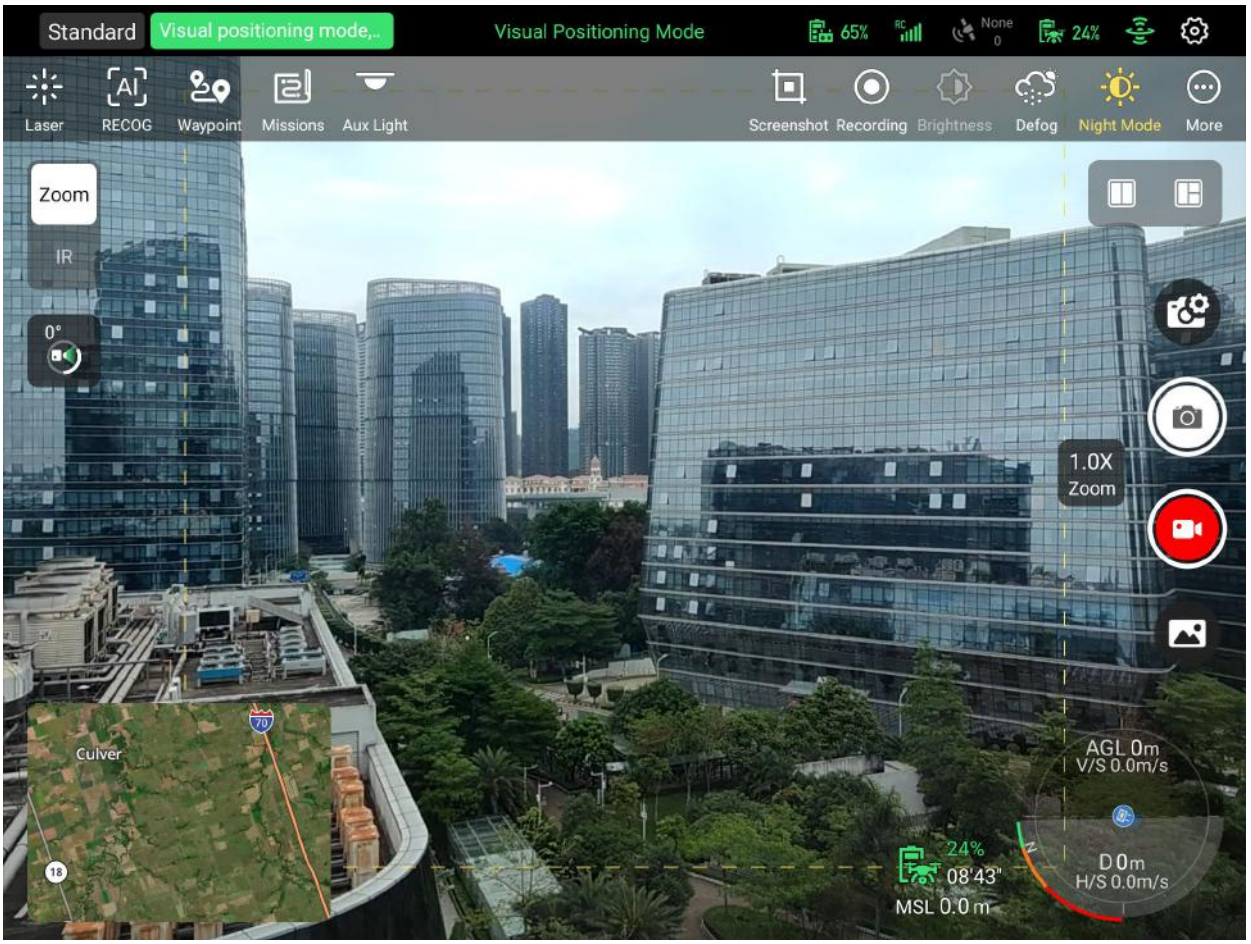


Figure 4-14 Camera Menu

Table 4-9 Camera Menu Details

No.	Button	Meaning	Description
1		Dual Screen	Click this icon to enter the dual-screen mode. The left screen can check map and infrared, and the right screen can check zoom and infrared. It also supports linkage zoom.
2		Triple Screen	Click this icon to enter the three-screen mode, the left side is the "Maps" window preview, the right side is the "Zoom" window preview and the "Infrared" window preview, also supporting zoom functionality.
3		Camera Settings	Click this icon to set additional parameters related to the camera.

4		Photograph	Click this icon to take a photo.
5		Video	Click this icon to start recording.
6		Album	Click this icon to view the photo album.
7		Zoom Factor	On the "Zoom Camera" interface, click this icon to adjust the visible light zoom factor. On the "Thermal Camera" interface, click this button to adjust the infrared zoom factor.

References

■ Set Grid

In the "Camera Settings" dialog box, select single or multiple grid lines under "Grid" according to your needs, so as to maintain the level of the shooting picture and play a role in assisting composition.

■ Enable/disable the Histogram function

In the "Camera Settings", click the button on the right of "Histogram" to enable or disable the histogram function. If this function is enabled, a floating "Histogram" window will be generated, and the user can drag the "Histogram" window to any area on the screen. Click the "Close" button in the upper right corner of the window to close the histogram function. The histogram relates to information about the color or tone of the image captured by the camera exposure, which reflects the image exposure.

■ Set Defog

In the "Camera Settings", select the defogging strength from the "Defog" section, selecting from 3 modes: weak, moderate or strong. The stronger the defogging mode, the darker the image will be. Defog can make the shooting or recording scene appear more transparent and emphasize the color. It is used to eliminate the "fogging phenomenon" in the picture or the lack of picture clarity caused by smog, etc.

■ Set Watermark

In the "Camera Settings", click "Watermark" to enable or disable the time watermark, latitude and longitude & altitude, and aircraft SN code functions. If enabled, the captured image will be accompanied by the set watermark.

■ Enable/disable Arm Lights

In the "Camera Settings", click the button on the right side of "Turn off arm light when shooting" to enable or disable this function. If enabled, the arm lights will be turned off when shooting. If turned off, the arm light will be turned on when shooting.

■ Select Storage Location

In the "Camera Settings", you can choose "SD Card" or "Internal Storage" as the storage path, and click "Format" on the right to format the location.

■ Reset Camera Parameters

In the "Camera Settings", click the reset button on the right side of "Reset Camera Parameters".

■ View Album

Click " ", you can enter the "Album" to view aircraft albums and local albums.

4.10 Attitude Ball

The attitude ball is mainly used to dynamically display the power of the aircraft and present the current position of the aircraft. It includes the home point, remote controller status, and crucial information such as distance and altitude on the tilt angle of the ball.

Figure 4-15 Attitude Ball

Table 4-10 Attitude Ball Details

No.	Meaning	Description
1	Estimated remaining flight time of the aircraft	Display the remaining battery power of the current aircraft and the remaining estimated flight time.
2	MSL Altitude	The current altitude of the aircraft relative to sea level.
3	Aircraft Position	Refers to the current position of the aircraft, which is convenient for observing the approximate position between the aircraft and you.
4	Aircraft Heading	Refers to 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 home based on the aircraft position and aircraft orientation.
5	Gimbal Direction	Refers to 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 speed of the aircraft.
8	Remote Controller Location	Refers to the position where you are currently controlling the remote controller.
9	Home Point	Refers to the position where the aircraft takes off.
10	Horizontal Distance	It refers to the horizontal distance from the current aircraft to the take-off point.

11	Horizontal Speed	Refers to the current horizontal speed of the aircraft.
12	Aircraft Battery Level	The edge of the attitude ball shows the current battery level of the aircraft (the color indicates the battery level of the aircraft, which is consistent with the battery level in the overview settings, please refer to "4.3.5 Battery Level of the Aircraft").

4.11 Route Missions (Toolbox)

4.11.1 Pre-Flight Inspection

Before the aircraft starts to execute a mission, Pre-Flight inspections are required. On the "Pre-Flight Check" interface, the user can preview the current status of the aircraft (such as: battery power, battery temperature, SD card memory, etc.), route data, with additional settings such as flight parameters and obstacle avoidance settings.

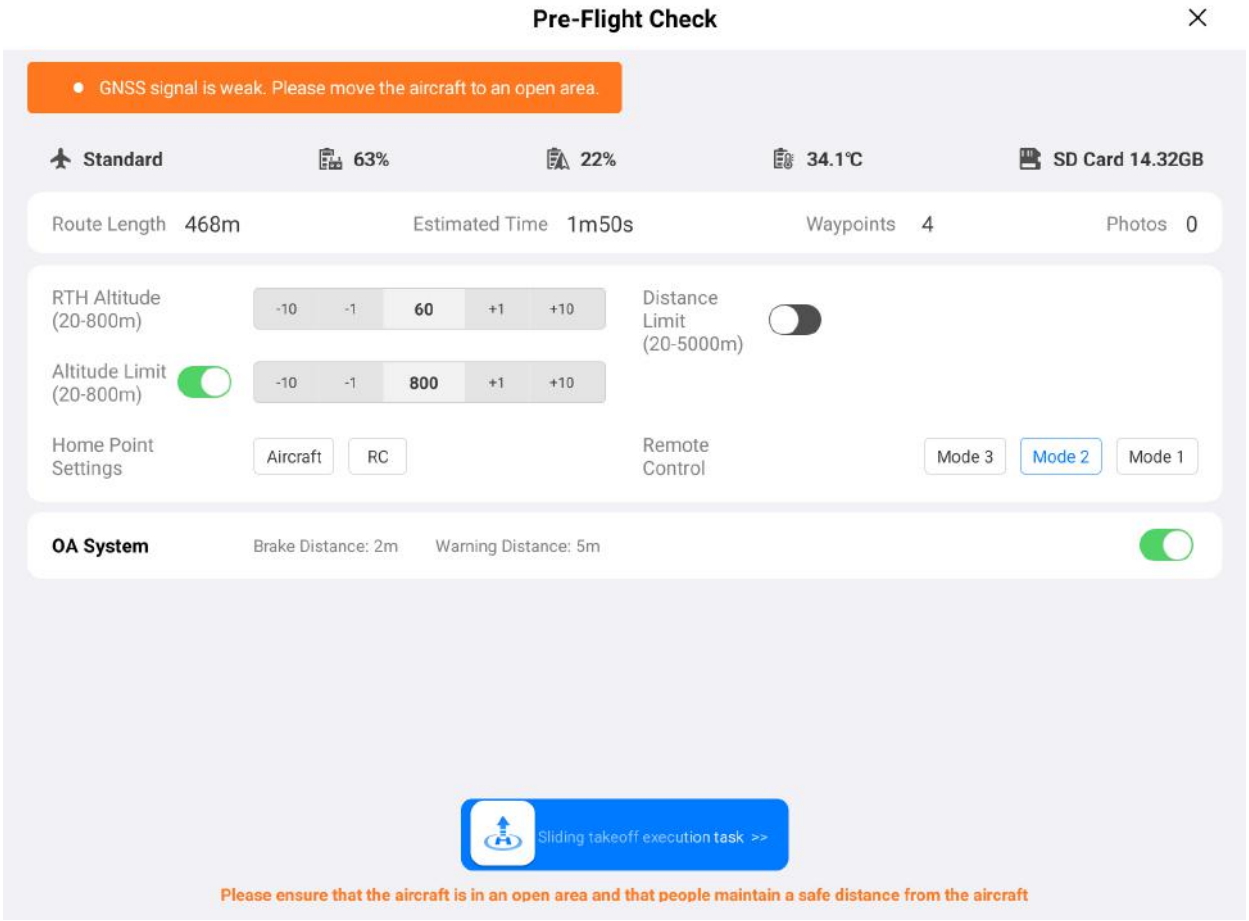


Figure 4-16 Aircraft Mission Pre-Flight Inspection

References

1) On the ongoing route mission interface, click "" on the left, and the "Pre-Flight Inspection" prompt will pop up. Please make sure that there is no fault alarm, otherwise, you need to follow the fault tips to solve it.

2) Confirm aircraft status and route preview data.
3) According to the different types of route missions, set the corresponding flight parameters. If not set, the "Return-to-Home Altitude", "Distance Limit", "Height Limit", "Home Point Setting", and "Remote Controller" settings are based on general settings, please refer to "4.3.1 Flight Control Parameter Settings" and "4.3.3 Remote Controller Settings".
4) Select to enable or disable obstacle avoidance.
5) After confirming that the above operations are completed, click the "Execute" button.

4.11.2 Waypoint Missions

On the Shortcut Toolbar, click " " to enter the "Waypoint Mission" interface. Users can add multiple waypoints on the map, every two 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, such as **Figure 4-17** and **Figure 4-18**.

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.

- Low battery power: A notification will pop up on the App interface to inform you that the aircraft will return to home automatically.
- Critically low battery power: The aircraft will end its mission and automatically land at its current position.
- During a flight mission, if the remote controller is suddenly powered off or automatically shuts down due to low battery, the drone will execute the Lost Action set by the user.

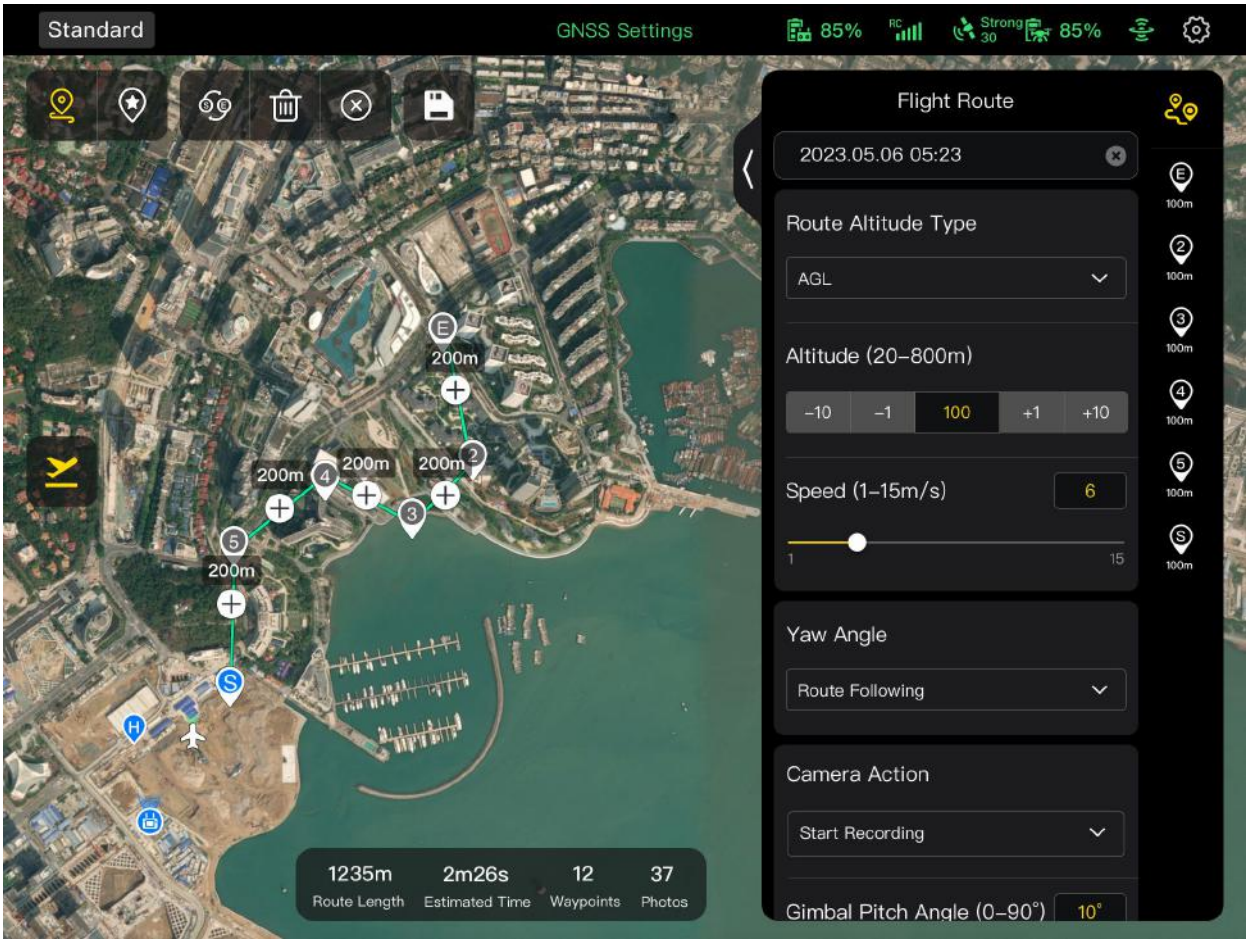


Figure 4-17 Waypoint Mission

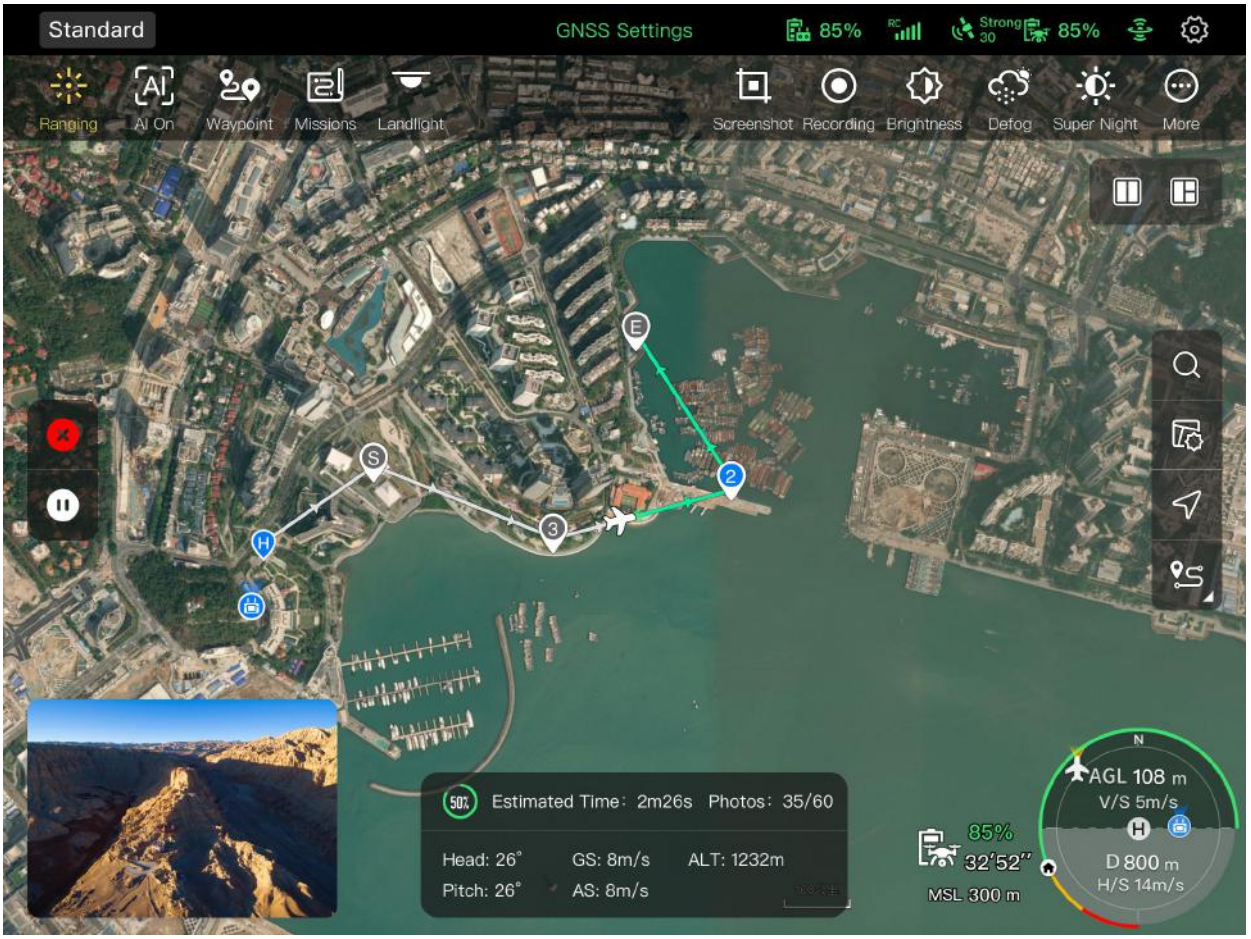


Figure 4-18 Mission in Progress

Table 4-11 "Waypoint Mission" Terms and Details

Term	Meaning
Relative Height	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	It is used to set the position where the nose of the aircraft is facing. 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 face the point of interest.
Gimbal Pitch Angle	The observable range of the gimbal camera, that is, the angle from the top to the bottom (0°~90°).
Lost Action	Refers to the actions that the aircraft will perform when the aircraft is disconnected from the remote controller 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.

Coordinated Turns Radius	Refers to the turn distance that can be set for waypoints in between the start point and end point. The optimal route is calculated by the algorithm combined with the route angle and the distance between the aircraft and the preset waypoint. With a larger radius, turns begin earlier from the preset waypoint.

Table 4-12 Details

No.	Icon	Meaning	Description
1		Waypoint Settings	A waypoint is a point used to fix the flight mission route of the aircraft. Click this button to pop up or close the waypoint setting window. You can also add waypoints on the map according to the location where the flight mission needs to be performed. Every 2 waypoints are connected to form a flight segment, and one or more flight segments constitute a route.
2		POI Settings	Click this button to pop up or close the POI setting (Point of Interest) dialog box, or add POIs on the map as needed. When setting a certain location as a point of interest, then set it to the point of interest according to the desired "aircraft yaw angle" at the waypoint, or set the associated waypoint through the point of interest, then when executing the route mission, the waypoint will be In the segment where the aircraft yaw angle is set to "Toward POI", the nose of the aircraft will always face the set POI.
3		Heading Switch	Click this button and the starting point and ending point of the whole route will change direction.
4		Delete	When the current setting is a waypoint, click this button once to delete the latest waypoint (any point of interest will be ignored); when the current setting is a point of interest, click this button once to delete the latest point of interest, (will ignore waypoints).
5		Clear	Click this button, and then click the "OK" button to clear all waypoints and POIs at one time.
6		Execute Mission	Click this button, and the aircraft will enter the "Pre-Flight Inspection" interface. Please refer to "4.11.1 Pre-Flight Inspection". After the inspection is completed, the aircraft will take off to perform the mission.
7		Save Route	Click this button, the currently edited waypoint mission will be saved. After entering the corresponding route mission page from the historical task, the button will change to " ", after clicking " " the route mission can be edited.
8		Search	Click this button, you can enter the required location Name in the "Search Map" edit box, and then select the correct location, and the specific location will be

searched.

9		Map Management	Click this button to adjust the map style to a standard map or a hybrid map and also support setting display/clear flight tracks. Standard map: 2D map. Hybrid map: Satellite and 2D map combined.
10		Orientation Lock	When the remote controller is rotated, the position of the map will change accordingly. Click this button to lock the direction of the map of the current remote controller.
11		Position	Click this button, and a dialog box will pop up, and you can choose to locate the remote controller location, the home point location, the aircraft location, and view the entire route.
12		Re-center	If the map is moved from the current positioning point to another location, this button will appear on the right, click this button, and the map will quickly return to the current positioning point.
13		Pause	When executing a mission, click this button, and the aircraft will hover at the current position.
14		End	Click this button, and the aircraft will return home automatically.
15		Edit Route	Click this button to edit the route settings.

References

■ Add a Waypoint

Click the "Waypoint Setting" button, find the starting point on the map and click it to create the first waypoint, and then repeat the previous operation to create multiple waypoints as required.

■ Set Route and Waypoint Parameters

During the process of adding a waypoint, a waypoint setting dialog box will pop up on the right, where you can set the corresponding parameters and actions of the aircraft at this point. At the same time, after the entire route is generated, click on the far right column to set the route and each waypoint.

■ Set route mission Name and Route Altitude

Click the "Route Mission Name" edit box and enter the Name as required. Then click the drop-down list of "Route Altitude Type" and select Relative Altitude or Altitude.

■ Set Flight Altitude

Refers to the altitude relative to the home point when the aircraft flies to this waypoint. In the "Flight Altitude" edit box, directly enter the flight altitude value or click the buttons to adjust.

Tips

- The maximum altitude setting for flight height is related to the altitude limit. Please refer to "4.3.1 Flight Control Parameter Settings".

■ Set Flight Speed

Flight speed refers to the flight speed of the aircraft when it flies to this waypoint. In the "Flying Speed" edit box, directly enter the flying speed value or slide to adjust the value.

Remarks

- After takeoff, the aircraft will gradually adjust the "flight altitude" and "flight speed" to the set values while flying to this waypoint.

■ Set Aircraft Yaw Angle

In "Route Settings", click the "Aircraft Yaw Angle" drop-down list to support setting along the route, manual, and custom.

In "Waypoint Settings", click the "Aircraft Yaw Angle" drop-down list to support setting along the route, manual, custom, and towards the point of interest.

➢ **Along the route**

If it is set to follow the route, the nose of the aircraft will follow the direction of the waypoint change, that is, turn from the current waypoint to the next waypoint according to the set route.

➢ **Manual**

If set to manual, the user uses the remote controller to control the direction of the aircraft during the flight.

➢ **Custom**

If it is set to Custom, the "Yaw Angle (0°-360°)" setting item will be displayed. You can directly enter the value or click the shortcut buttons on the left and right sides to adjust the value. After setting, the aircraft nose will be adjusted according to the set value.

➢ **Facing POI**

If it is set to Facing POI, the nose of the aircraft will always face the set POI during the flight segment where the yaw angle of the aircraft is set to "Toward POI" when the route mission is executed.

■ Set Camera Actions

Click the "Camera action" drop-down list to support the selection of start recording, stop recording, take a photo, stop taking a photo, take a photo at a fixed time, take a photo at a fixed distance, and no action.

- When it is set to "Timed Photo", it will display "Photo Time Interval", at this time, you can slide left or right to adjust.
- When it is set to "fixed distance photo", the "photograph distance interval" will be displayed, and you can slide left or right to adjust.

■ Set the gimbal pitch angle

Enter the value in the edit box on the right side of "Gimbal Pitch Angle (0°-90°)", or select it by sliding left and right below.

■ Weather Settings

Click the "Weather" drop-down list to select sunny or cloudy days according to the current weather when performing missions. Different weather modes are adapted to the corresponding photo scenes.

■ Set Mission Completion Action

Click the drop-down list of "Complete Mission Action", if you select Auto Return, the aircraft will automatically return to the starting point after completing the mission; if you select Hover, the aircraft will hover at the end point after completing the mission.

■ Set Lost Action

Click the drop-down list of "Lost Action", if you choose to continue the mission, the aircraft will still automatically complete the remaining missions; if you choose to return automatically, the aircraft will automatically return to the starting point.

■ Set Obstacle Avoidance Mode

The obstacle avoidance mode refers to the action that the aircraft will perform when it encounters an obstacle. Click the "Obstacle Avoidance Mode" drop-down list. If you select Off, the obstacle avoidance mode will be turned off; if you select Hover, the aircraft will hover near the obstacle; if you select Hover, the aircraft will automatically go around the obstacle.

⚠ Warning

- If the obstacle avoidance mode is turned off, please try to choose an open area to control the aircraft.

■ Set Coordinated Turns Radius

Click the "Coordinated Turns Radius" edit box to enter a value or click the left and right buttons to adjust the value accordingly.

Remarks

- When the route has more than 3 waypoints, you can configure coordinated turn radius settings for the waypoints, excluding the starting and ending point.

■ Set Segment Action

In the "segment action" of the waypoint, you can check "follow the route", then the waypoint will follow the route setting in this segment. If you need to set the camera movement

and gimbal pitch angle separately, you can uncheck "follow the route", and the detailed operation steps are the same as above.

■ Set Waypoint Action

Click the "Add action +" button to add up to 10 waypoint actions. Each waypoint action supports setting camera action, gimbal pitch angle, and yaw angle. The detailed operation steps are the same as above.

■ Set Latitude and Longitude

After adding a waypoint, the latitude and longitude parameters can be obtained automatically. You can also click on the "longitude" and "latitude" edit boxes to input the longitude and latitude of the waypoint adjustment. At the same time, it supports fine-tuning on the right direction keyboard.

Table 4-13 Set Latitude and Longitude

	Click Up Arrow	Click Down Arrow	Click Left Arrow	Click Right Arrow
Longitude	/	/	-0.000001	+0.000001
Latitude	+0.000001	-0.000001	/	/

■ Add Point of Interest

Click the "POI Setting" button, find the specific location on the map where the POI needs to be set and click to create the first POI, and then repeat the previous operation to create multiple POIs as required.

■ Set POI Parameters

During the process of adding a point of interest, a point-of-interest setting dialog box will pop up on the right, and the corresponding parameters of the aircraft at this point can be set. The user can click on the rightmost column to set each POI after all POIs are generated.

■ Set the "Point of Interest" Altitude

POI altitude refers to the altitude relative to the home point when the aircraft flies to this POI. In the "Height (0-800m)" edit box, directly enter the height value of the point of interest or click the shortcut buttons on the left and right sides to adjust the value.

Important

- When the point of interest is higher than the waypoint, the gimbal camera cannot look at the point of interest above.

■ Set Associated Waypoints

In the "POI Settings" dialog box, click the waypoints to be associated under "Associate Waypoints". If you want to associate all waypoints, you can check the "Select All" button on the right.

■ Pre-Flight Inspection

After completing all the settings of the route, click " ", on the left to enter the "Pre-Flight Check" interface, please refer to "4.11.1 Pre-Flight Inspection".

■ Upload a Route and Start a Mission

After checking, click the "Upload" button, and the aircraft will automatically take off to perform the mission. The estimated completion time, preset altitude, wind speed and other basic information are displayed in the middle of the bottom. Zoom in to full screen for viewing. If manual operation is required, please refer to "4.7 Zoom Camera Interface".

■ Complete Route Missions

When the aircraft completes the waypoint mission, the bottom middle displays the relevant data of the route flight mission, such as: the total length of the route, estimated time, waypoint, photos taken, and the number of flights in total.

4.11.3 Resume Mission

When an abnormal situation such as an abnormal exit occurs during a flight mission, click the "Task Management" button to enter the "Missions" interface to resume a mission.

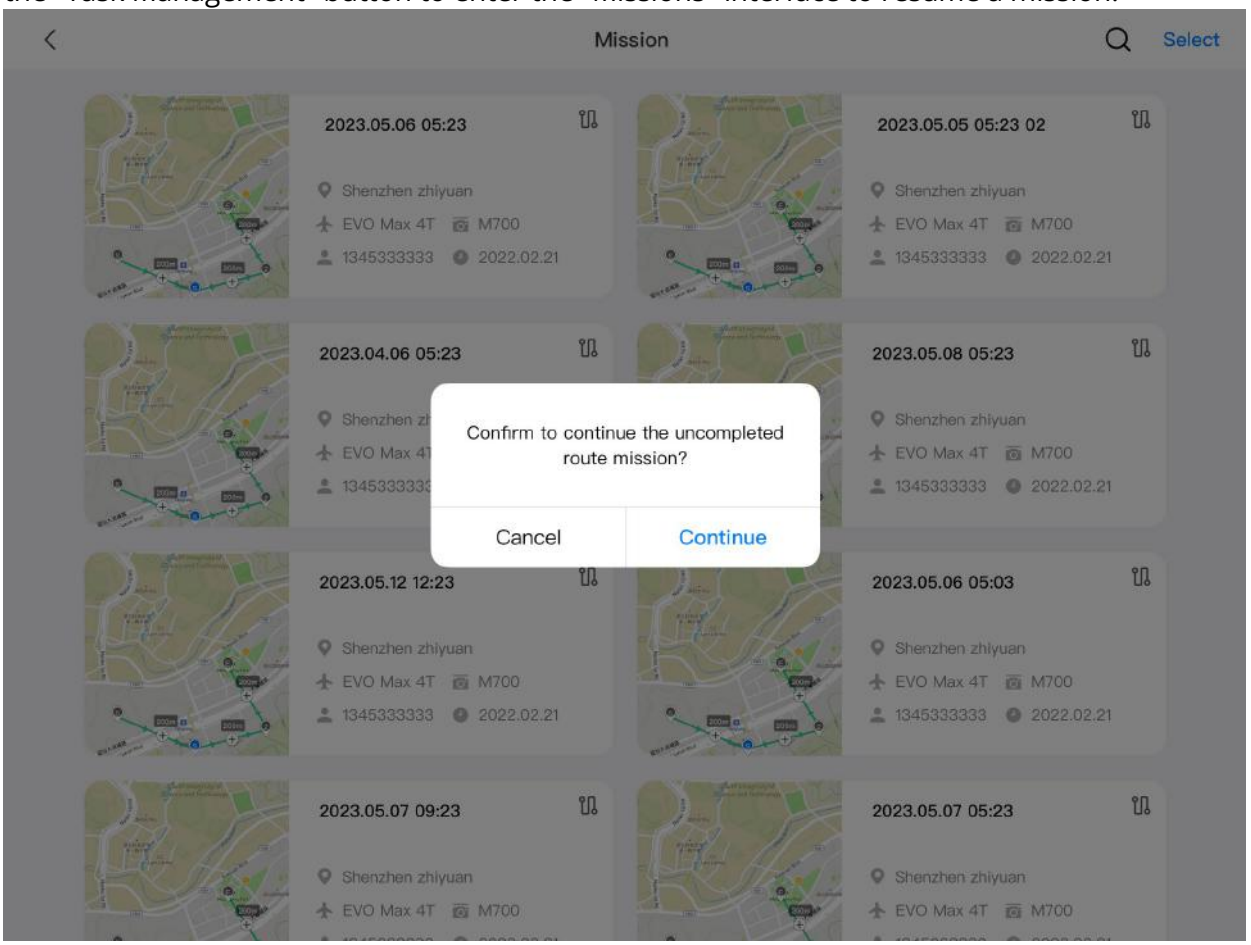


Figure 4-19 Resume Mission

References

■ Resuming a Mission

Click the "Continue" button, the location where the aircraft stopped will be displayed, and the aircraft will fly to this position to continue the last mission.

■ Cancel Resume Process

Click the "Cancel" button, after closing the pop-up window, the mission will no longer be executed from the last point.

4.11.4 Mission History

On the "Missions" interface, users can search, edit, favorite, and delete previously saved historical flight missions, as shown in **Figure 4-20**.

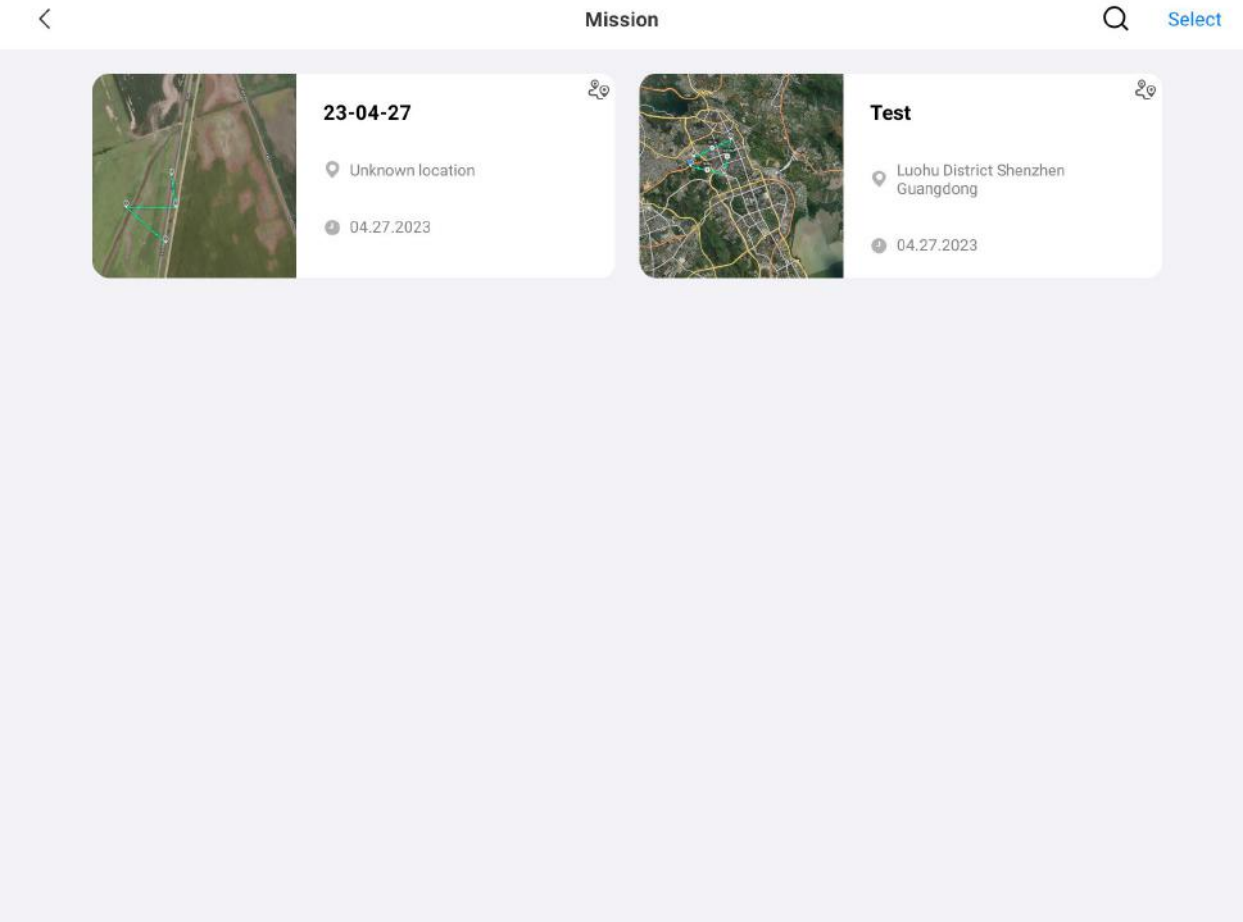


Figure 4-20 Historical Missions

References

■ **Edit**

Click the historical flight mission to be modified to re-enter the route editing interface. For detailed operations, please refer to "4.11.2 Waypoint Mission".

■ **Favorite**

Click the "Select" button in the upper right corner, then single-, multiple-, or all-select the missions to be favorited, and then click the "☆".

■ **Delete**

Click the "Select" button in the upper right corner, then single-select, multi-select or select all missions to be deleted, and then click "🗑". After a dialog box pops up, click the "Confirm".

4.12 Service Center (Tools)

On the "Tools" interface, click to enter the "Service Center" interface, where users can register and log in, purchase the "Autel Robotics Care" service, and view flight records.

Chapter 5 First Flight

5.1 Instructions for First Flight

Before the first flight, users are requested to carefully read the above chapters and understand the contents, and understand the features of the product in detail, so as to use the product correctly and ensure safe use.

5.2 Flight Precautions

5.2.1 Flight Safety

Before using the aircraft, the user should first carry out relevant basic flight training, be familiar with the functions and characteristics of the aircraft and the remote controller, or be guided by a professional. Before the flight, please understand all the local regulations on drone flight in advance to know the local flight requirements and restrictions, fly in the designated drone flight area, and use the built-in Autel Enterprise App of the remote controller to set the distance that meets the regulations and height restrictions. There may be legal risks when using an aircraft in an unsuitable flight environment (such as a flight altitude exceeding 120 meters). Read and understand the "Disclaimer and Safety Operation Guidelines" before flying to learn more about precautions.

Table 5-1 Flight Safety

No.	Precautions
1	Do not fly in dangerous conditions such as strong winds, rain, hail, snow and other severe weather conditions.
2	Please fly in an open area and stay away from densely populated areas, buildings and sources of electromagnetic interference.
3	Please fly at an altitude below 6000 meters.
4	Due to insufficient lighting conditions, no GNSS signal, and narrow space, some functions may be limited.
5	When flying at night, please turn on the beacon to ensure flight safety.
6	Please keep away from airports, national borders, military areas, party and government agencies and sites, regulatory sites, power plants, substations, gas stations, docks, ports, large-scale event sites, etc. Take care around public infrastructure, including all railways and stations.

⚠ Warning

- In US, according to FAA requirements, upon purchasing a drone, the owner must register their drone with the government (https://faadronezone-access.faa.gov/) Those who fail to

implement real-name registration and paste registration marks will be punished by the regulatory authorities in accordance with relevant regulations. This model is a small drone. To register, the owner must be 13 years of age or older.

- According to the relevant laws and regulations in the EU, the EVO MAX 4T is an open category drone classified C2, under which the minimum age of pilot of the drone is 16 years, and the pilot competence requirements of European Union Aviation Safety Agency (EASA) you may check https://www.easa.europa.eu/en/domains/civil-drones/naa.
- Anti-jamming function is enabled by default. Before flying, always carefully plan out the space in which you intend to fly, and conduct all relevant safety checks.
- Regardless of when and where flight operations are performed, the aircraft weight must not exceed the declared MTOM (Maximum Take-Off Mass) amount.

5.2.2 No-Fly Zones

EVO Max 4T can automatically identify No-Fly Zones and avoid these areas by default during flight. This function ensures that the aircraft complies with the legal flight area requirements.

⚠ Warning

- Users should ensure compliance with all relevant flight rules and regulations.

5.2.3 Waiver Application

For special scenarios that require zoning restrictions to be lifted, please navigate to www.autelrobotics.com/page/noflight, login to your Enterprise Account, and complete the waiver application. Once accepted and processed, the aircraft will be permitted to fly in zones previously restricted.

5.3 Pre-Flight Preparations

Before flying, please prepare according to the following chapters.

5.3.1 Unpacking

After receiving the product, please unpack the outer packaging and take out the rugged case. Press and hold the two buckles on the rugged case, and pull it upwards in the direction shown in **Figure 5-1** to open the rugged case.

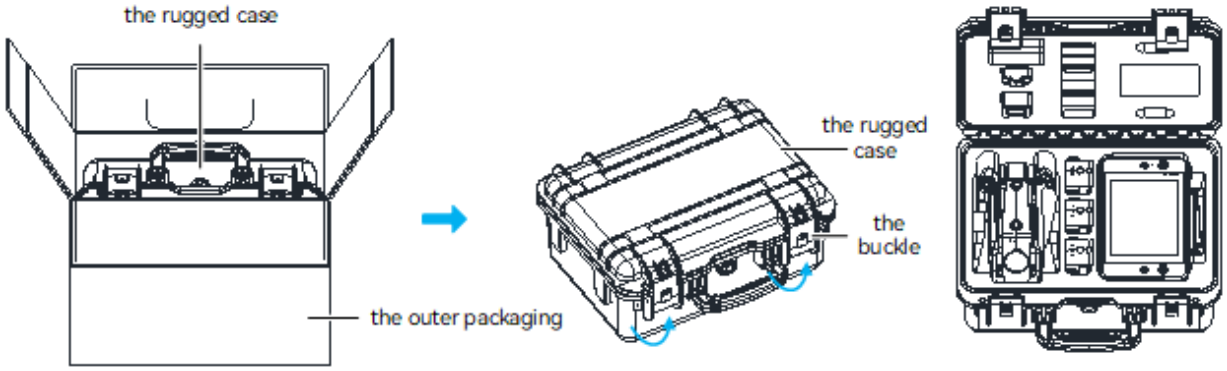


Figure 5-1 Unpack the outer packaging and take out the rugged case

After taking out the Autel Smart Controller V3 from the rugged case, you can see the EPP tray packaging, and then you can see the documents, Live Deck 2, battery charger, RC charger, and accessories after taking it out, as shown in **Figure 5-2**.

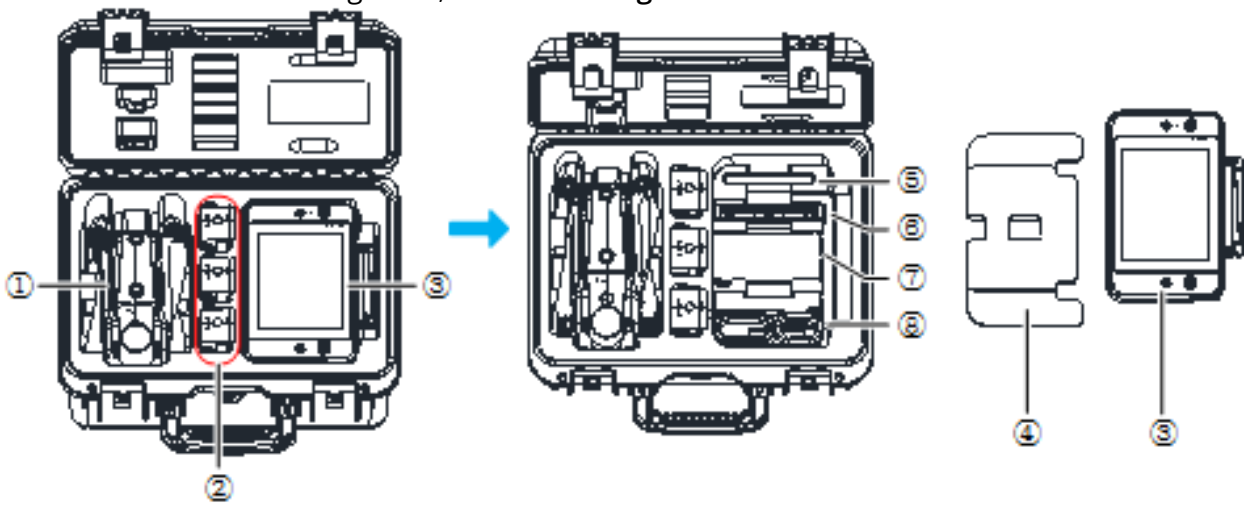


Figure 5-2 Rugged Case

Table 5-2 What's In The Case

No.	Item	Description
1	Aircraft	Please refer to "Chapter 1 Aircraft".
2	Battery	There are 3 smart batteries in total, please refer to "Chapter 3 Smart Battery".
3	Autel Smart Controller V3	Please refer to "Chapter 2 Remote Controller".
4	EPP Tray Packaging	Used to carry the Autel Smart Controller V3.
5	Documentation	Quick Start Guide, Service Card.
6	Live Deck 2	Optional accessory: Provide high-definition real-time video to improve the team's collaborative combat capabilities.
7	Battery Charger	Please use the Autel battery charger to charge the smart battery.

8	Accessories	Data cable, remote controller strap, Lens cloth etc.

Important

- A comprehensive introduction of the product packing list is available online, please visit: https://www.autelrobotics.com/download/591.html.
- When unboxing the product, please first check the items according to the product list in this manual. If anything missing or damage is found, please contact Autel Robotics After-Sales Support or a local authorized dealer promptly.

5.3.2 Charging

Please use the official battery charger and the remote controller charger, and connect them to the flight battery and the USB Type-C port of the remote controller for charging to wake up the battery. For detailed operation methods, please refer to Chapter 3 Smart Battery "3.2 Battery Operation Instructions".

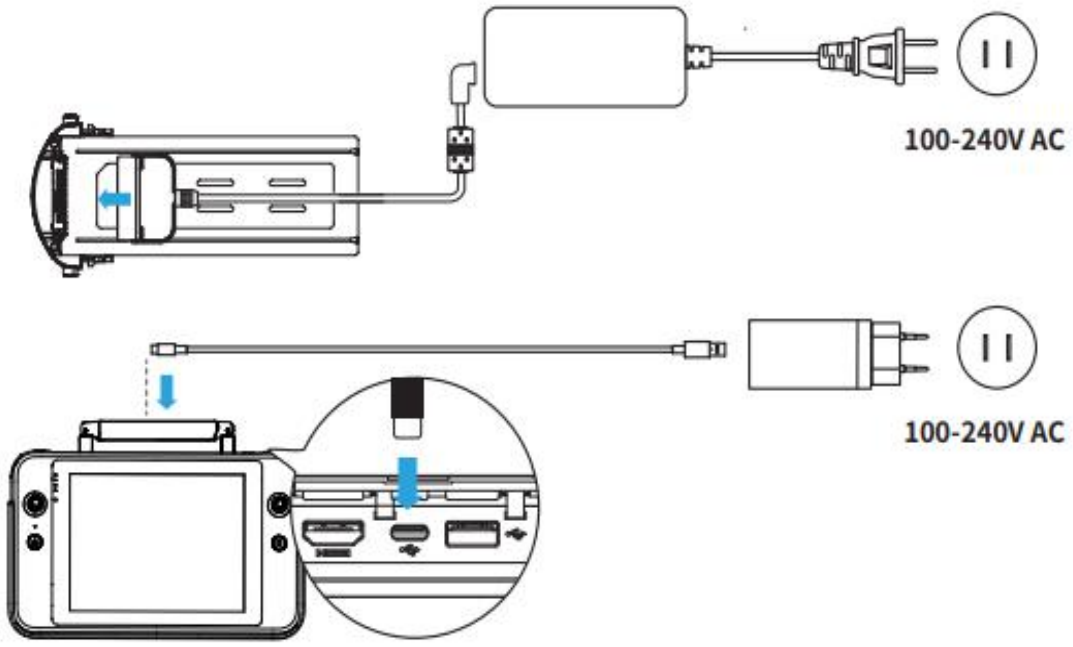
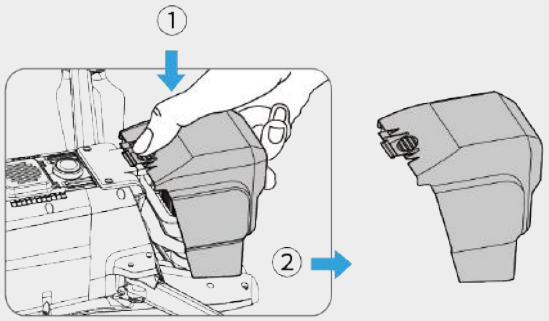
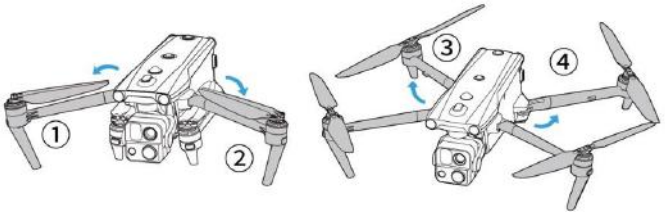
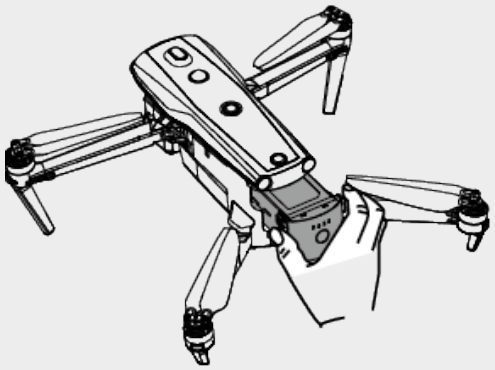
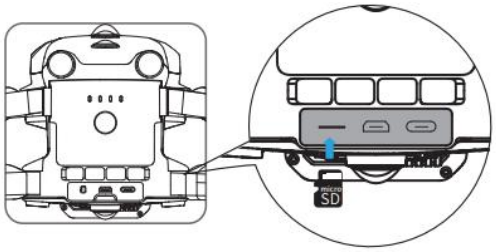


Figure 5-3 Charging

5.3.3 Preparing the Aircraft

Table 5-3 Preparing the Aircraft

Step	Diagram
1) Take off the protective cover of the gimbal: lightly press the buckle of the protective cover and take it off.	
2) Unfold the arms: When unfolding the arms, please unfold the front arms first, and then unfold the rear arms.	
3) Inserting the battery: Align the battery from the rear of the aircraft fuselage and push it in.	
4) Insert microSD card: Insert the microSD card into the card slot on the rear of the device.	

Important

- After powering off the aircraft, it is necessary to mount the gimbal protective cover promptly to prevent damage to the gimbal.
- Before powering on the aircraft, unfold the front arms of the aircraft first, and then unfold the rear arms of the aircraft.

- Before folding the arms of the aircraft, power off the aircraft first.
- Before inserting the microSD card, please make sure that the side with the metal contacts of the SD card is facing up, so as not to cause damage to the aircraft card slot and the microSD card.

5.3.4 Installing/Removing Propellers

The EVO Max 4T uses a quick-release propeller design, and the propellers on the four arms are installed by default at the factory. Please refer to the following steps to install/remove the propellers.

■ Install the propellers

Please refer to **Figure 5-4** and **Table 5-4** below to install the propellers. There are 2 types (2 for each type) of different propellers that match the corresponding mounts. Please install the 2 propellers with white circles/without white circles on the center shaft respectively to the propeller mounts with white marks/without white marks, and then press the position of the propeller center shaft firmly, and then move along the propeller in the locking direction indicated on the shaft so that the propeller is securely installed.

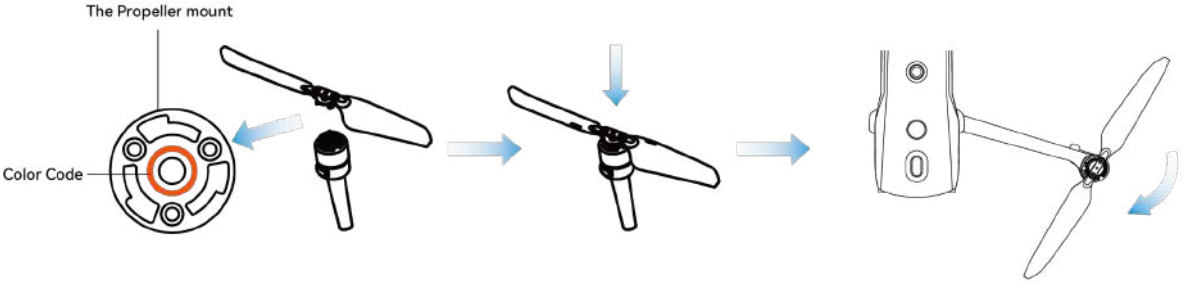


Figure 5-4 Propeller Installation

Table 5-4 Propeller Installation Details

Propeller	White circle on center shaft	No white circle on center shaft
Installation Area	Mounts to white marked mounts	Mounting to unmarked mounts
Diagram Description	Lock orientation: Turn the propeller this way: to tighten it. To unlock: Turn the propeller this way: to loosen and remove.	

Tips

- The orange circular mark on the propeller installation figure shown in **Figure 5-4** is only for reference, with the object correctly being colored white.

■ Propeller Disassembly

1) Press and hold the battery power button for 3 seconds to power off the aircraft;
2) First hold the position of the motor to prevent it from rotating, press down on the central shaft of the propeller firmly, and then turn it in the unlocking direction to

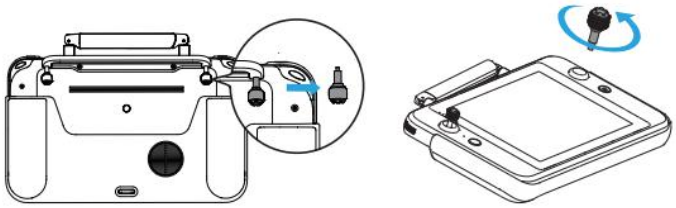
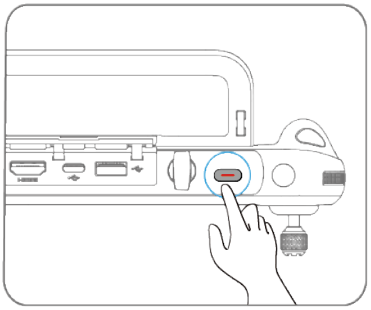
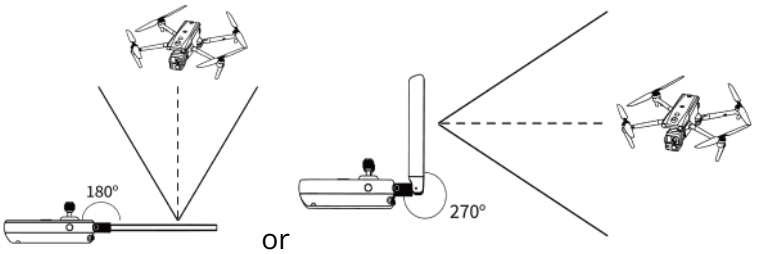
remove the propeller.

⚠ Warning

- Before installing or removing propellers, make sure the aircraft is powered off.
- When installing or removing propellers, it is recommended to wear protective gloves.
- Do not touch spinning propellers or motors.
- Before flying, check that each propeller is securely installed.
- Do not fly if any propeller is broken.
- Before testing the motor, make sure the propeller is removed.

5.3.5 Preparing the Remote Controller

Table 5-5 Preparing the Remote Controller

Step	Diagram
1) Removing/installing the command sticks: Take and install the command sticks from the handle on the back of the remote controller.	
2) Power on the remote controller: press and hold the power button on the top of the remote controller for 3 seconds to turn it on.	
3) Unfolding the antennas: When using it for the first time, the antenna of the remote controller is in the storage state and needs to be unfolded.	

Tips

- Adjusting the position of the antenna can improve the image transmission signal quality.

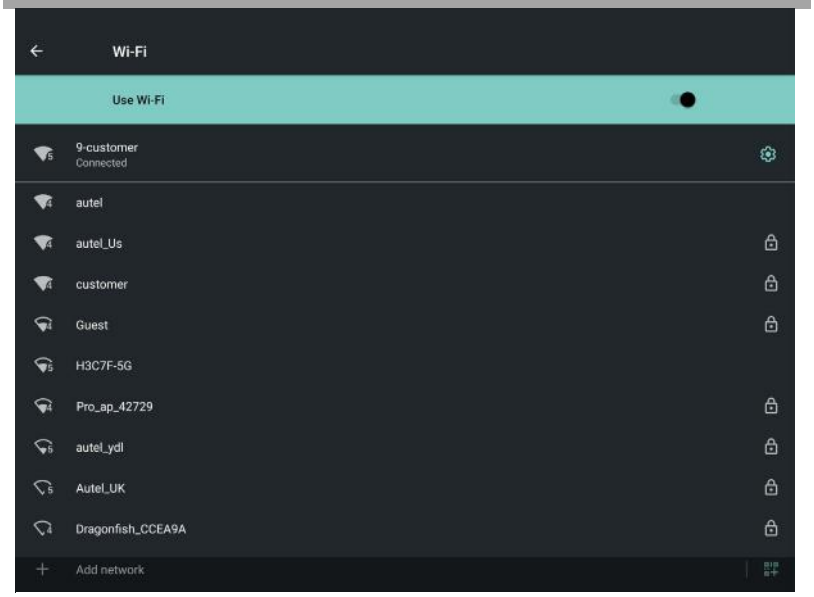
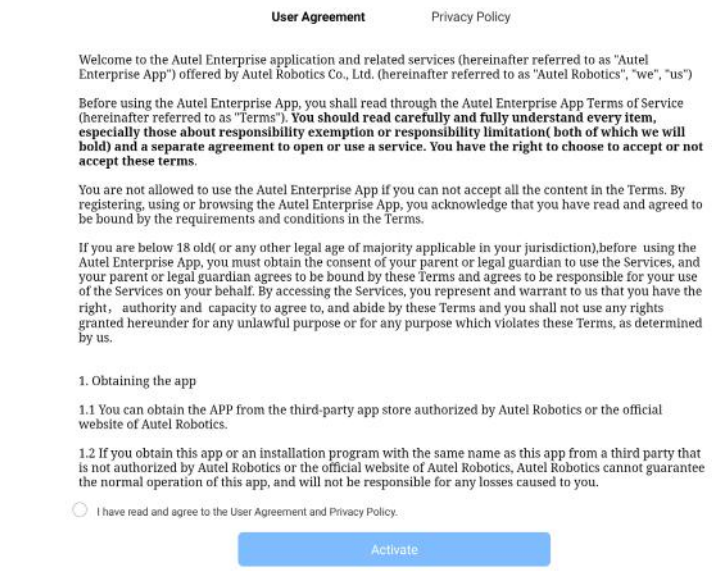
For detailed operation methods, please refer to "2.2.4 Adjusting the Antenna Position" in Chapter 2 Remote Controller.

- When the remote controller is disconnected from the aircraft and the screen is in standby status for 50 minutes, the remote controller will automatically power off.

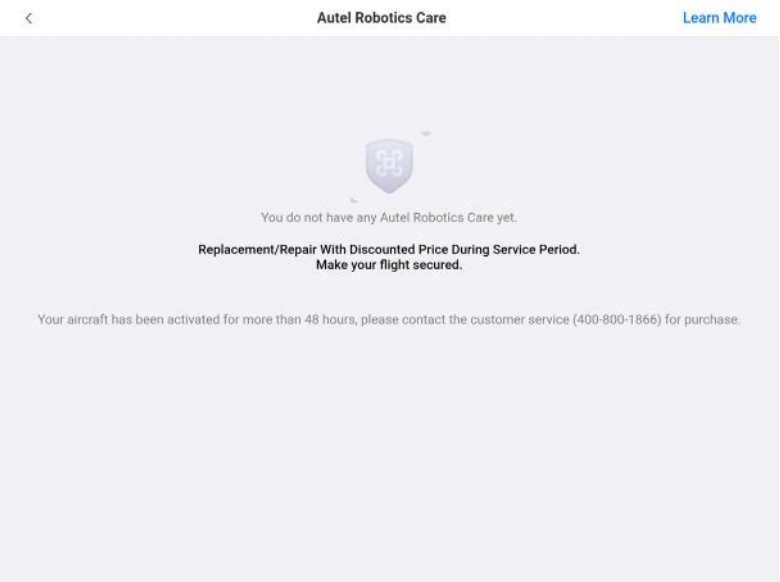
5.3.6 Login, Pairing, Activation (activation only upon first use)

When using EVO Max 4T for the first time, you need to activate the product after connecting to Wi-Fi, and then choose whether to purchase the "Autel Robotics Care" service according to your needs. The detailed process is shown in **Table 5-6** below.

Table 5-6 Login, Pairing, Activation

Step	Diagram
1) Connect the remote controller to Wi-Fi.	
2) According to the notices, read and agree to the user agreement and privacy policy (when you use the remote controller for the first time, you need to complete the activation process before it can be used normally), check "I have read and agree to abide by the above terms and rules", and click "Activate " button to activate the product.	

3) Enter the "Autel Robotics Care" interface, and choose whether to purchase according to your needs.



5.3.7 Novice Guide (first time use only)

When you enter the Enterprise App for the first time, a novice guide will appear. Please learn the introduction and follow the tips on the screen until you enter the main interface.

5.3.8 Reconnect the aircraft (not required by default, required after disconnection)

The remote controller has been paired with the EVO Max 4T at the factory, and there is no need to connect it again after powering on. Normally, after completing the activation process, you can directly use the remote controller. However, if the aircraft disconnects accidentally or is unintentionally operated incorrectly by the user, the aircraft needs to be re-connected. For detailed operation methods, please refer to "2.2.5 Pairing (Connecting to Aircraft)" in Chapter 2 Remote Controller.

Important

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

5.4 Pre-Flight Inspection

Follow the steps below to perform a comprehensive Pre-Flight check:

1) Make sure the batteries of the aircraft and remote controller are fully charged, paying attention to the battery of the aircraft to ensure it is installed in place (the edge of the battery must be closely attached to the fuselage after installation).
2) Make sure that the propellers of the aircraft are installed tightly without damage or deformation, the motor and propellers are clean and free of foreign objects, and the

propellers and arms are fully extended.

3) Make sure that all aspects of the aircraft, including the lens of the gimbal, the lens of the OA sensor, and the auxiliary light are free from foreign objects, dirt, or fingerprints, and are not blocked by loads on the fuselage.
4) Make sure that the protective cover of the gimbal has been removed and the three-axis movement of the gimbal is in a normal state.
5) Make sure that the microSD card slot and relevant interfaces are covered tightly, otherwise performance will be affected.
6) Make sure the antenna of the remote control is deployed.
7) Place the aircraft in an open and flat area outdoors and ensure that there are no obstacles, buildings, trees, etc. around. The user should stand at least 3 meters away from the tail of the aircraft when operating.
8) Make sure that after the aircraft is powered on, the aircraft and the remote controller are connected, and the aircraft motors, gimbal, and camera are working normally.
9) Make sure that all warnings and errors displayed on the Autel Enterprise App are handled.
10) Enter the Autel Enterprise App setting page to set the flight control parameters, obstacle avoidance system, joystick mode and other related flight safety parameters, and be familiar with the flight operation; ensuring that the parameter settings meet your own needs and guarantee flight safety.
11) If multiple aircrafts are flying at the same time, please keep an appropriate air distance to avoid any accidents.

⚠ Warning

- Before powering on the aircraft, please ensure that the battery is installed in place (the edge of the battery is closely attached to the fuselage after installation), so as to avoid the battery potentially falling during flight and causing flight safety accidents.
- Only use accessories provided with the aircraft or sold or authorized for use with the aircraft. Using accessories that are not officially certified may pose a serious safety risk and void the product warranty.

5.5 Basic Flight Process

The aircraft provides three command stick modes: **Mode 1**, **Mode 2**, and **Mode 3**. Each mode controls the aircraft differently. The default mode is Mode 2. The user can switch the mode in the Autel Enterprise App according to their control habit (for a detailed operation method of the switch, please refer to Chapter 4 of the Autel Enterprise app: "4.3.3 Remote Controller Settings".

The following is the basic operation of product flight.

1) Please refer to "5.3 Pre-Flight Preparations" to complete the preparations before flight.
2) Place the aircraft in an open area and stand at least 3 meters away from the rear arms of the aircraft.
3) Press and hold the battery power button for 3s to turn on the power of the aircraft, wait for the rear arm LED indicators to turn green and flash slowly (indicating that the current status is normal).
4) Long press the power button for 3s to turn on the remote controller.

5) Please refer to "5.5.1 Start/Stop the Aircraft" and "5.5.2 Takeoff/Landing the Aircraft" to use the remote controller to start the aircraft and take off.
6) Please refer to "5.5.3 Control the Aircraft (Default Mode 2)" to control the aircraft carefully.
7) Please refer to "5.5.2 Takeoff/Landing the Aircraft" to land the aircraft, and then turn off the motors.

5.5.1 Start/Stop the Aircraft

■ Start the Aircraft

Power on the aircraft, the aircraft will automatically perform self-check. Then simultaneously move the left and right command sticks diagonally inward or outward for 2 seconds, as shown in **Figure 5-5**.

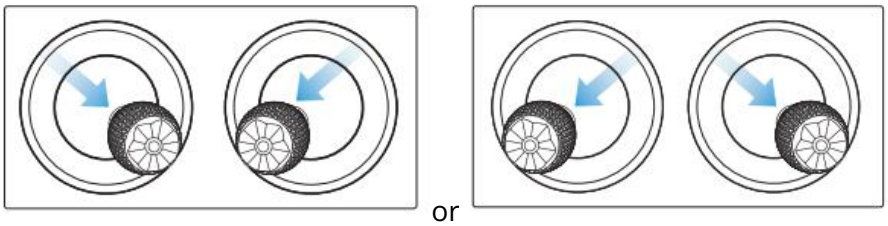


Figure 5-5 Start the Aircraft

■ Stop the Aircraft

After the aircraft starts, the following two methods can be used to stop the aircraft.

➢ **Method 1**

When the flight is in landing state, pull the throttle stick (left command stick) as shown until the motors are turned off.

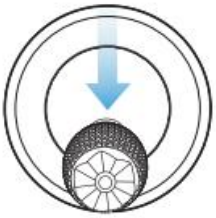


Figure 5-6 Stop the Aircraft (left command stick straight up)

➢ **Method 2**

When the flight is in landing state, move the left and right command sticks inward or outward until the motors are turned off.

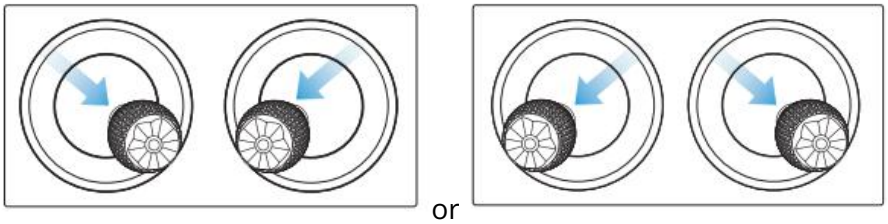


Figure 5-7 Stop the Aircraft (move the left and right command sticks diagonally inward or outward)

⚠ Warning
● The aircraft will heat up during operation, please handle carefully when storing it. ● When the battery power of the aircraft is 15% or lower, the aircraft cannot take off. ● When the battery of the remote controller is too low, please do not take off.

5.5.2 Takeoff/Landing The Aircraft

■ Aircraft Takeoff (Default Layout, Mode 2)

Place the aircraft on the open ground with the tail facing the user, and the steps to operate the aircraft to land are as follows: push the left stick up, and the aircraft will slowly take off vertically and rise.

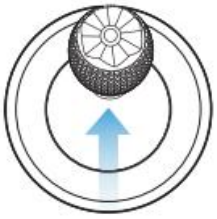


Figure 5-8 Aircraft Takeoff

■ Aircraft Landing (Default Layout, Mode 2)

● **Landing the aircraft manually**

1) Find a suitable location for the aircraft to land (open, flat area).
2) When the aircraft reaches the sky above the target position, release the joystick to make it hover above.
3) Pull the left stick down to land the aircraft.
4) After the aircraft reaches the ground, pull the left joystick to the bottom until the motors are turned off.

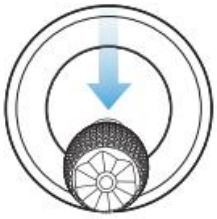


Figure 5-9 Aircraft Landing

⚠ Warning
● When the low battery warning (25%) is displayed, the LED on the rear arms of the aircraft will turn red and blink, and return to a safe landing point as soon as possible.

● **Aircraft Automatic Landing**

When any of the following conditions are met, the failsafe will be triggered and the aircraft will automatically land from its current position.

1) Critically low battery warning activates.
2) Abnormal sensor, emergency landing.

⚠ Warning

- When the aircraft takes off and lands, keep it away from people, vehicles and other moving objects.
- If you do not have heavy flight experience, please keep the aircraft in your sight at all times when flying.
- When the aircraft relies on visual positioning to fly, please do not approach mirror reflection areas such as water or snow. When the GNSS signal is poor, please ensure that the drone flies in a well-lit environment.
- When the low battery alarm occurs, the automatic return process should not be canceled. Otherwise, the aircraft may return to the home point due to insufficient power.
- When Autel Enterprise App displays an alarm, it should be processed according to the corresponding references immediately.

5.5.3 Control the Aircraft (Default Mode 2)

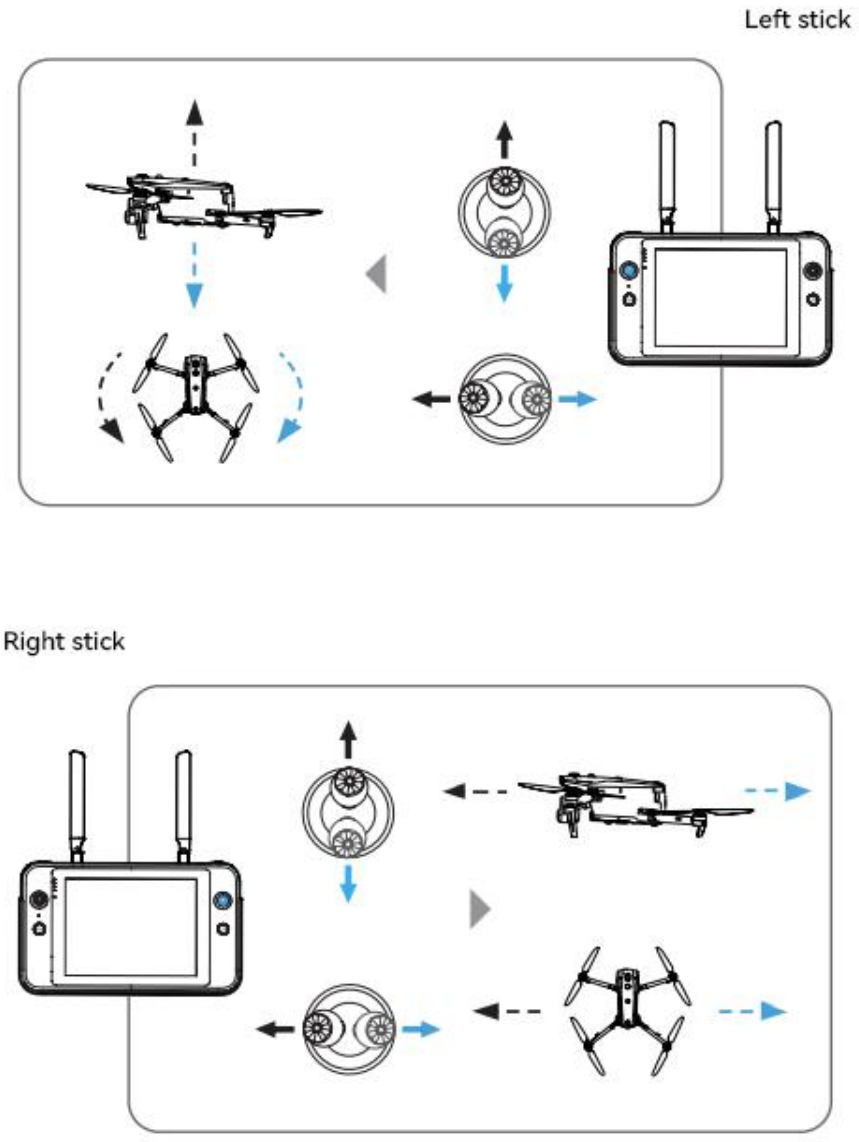


Figure 5-10 Controlling the Aircraft

Chapter 6 Firmware Update and Maintenance

6.1 Firmware Downloads and Update

In order to ensure the reliability and overall performance of EVO Max 4T, as well as to obtain the best flight experience, the aircraft and remote controller need to be updated to the latest firmware version.

Important

Before performing a firmware update, make sure that:

- The aircraft is powered on and the motors are not started.
- Make sure the battery power of the aircraft and the remote controller is higher than 25%, and the remote controller is in a state of normal connection to the network.
- The microSD card used by the aircraft has enough storage space to save the firmware update package file.
- The firmware update process usually lasts about 15 minutes (depending on the network conditions the remote controller is connected to). During the update process, please keep the network connection normal, do not turn off the aircraft or the remote controller, and do not remove the microSD card from the aircraft during the update, so as not to cause the update to fail.
- After the firmware is updated, the remote controller may be disconnected from the aircraft. If you need to re-pair them, please refer to "2.2.5 Pairing (Connecting to Aircraft)" in "Chapter 2 Remote Controller".

Tips

- Before flying, please confirm that the firmware of the aircraft, remote controller and supporting products is the latest version.

6.1.1 Online Updates

1) Keep the aircraft and remote controller powered on, and make sure the aircraft and remote controller have been connected.
2) Open the Autel Enterprise App of the remote controller, if there is a new firmware update, a Tips box will automatically pop up on the software interface to remind you to download and install it.
3) Click to update according to Tips, Autel Enterprise App will then download the latest firmware and perform automatic update. When the automatic update starts, you can check the update progress through the software interface.
4) After the update is complete, the remote controller will automatically restart, and it can be used after the restart is complete.

6.2 Equipment Calibration

6.2.1 Compass Calibration

The compass has been calibrated at the factory, and no user calibration is required under normal conditions. If the compass displays an error message, the flight direction of the aircraft is inconsistent with the control input direction, or the flight location deviates too much from the calibration location, please follow the steps below to calibrate it.

⚠ Warning

- The compass is very sensitive to electromagnetic interference, which can cause compass errors and reduced flight quality. If the compass still does not work normally after calibration, you can move the aircraft to another location to calibrate again.
- Choose an open outdoor area.
- Keep away from all sources of magnetic interference, such as magnets or concrete rebar. Proximity to large structures may also affect calibration results.
- Keep away from underground and overhead power transmission lines.
- Do not carry magnetic materials with you.
- Keep away from all electronic devices that may interfere with calibration.
- During the calibration process, please do not turn off the power of the aircraft or start the motors.

1) After turning on the aircraft and the remote controller, click "Settings" > "Compass Calibration" > "Start Calibration" in the main interface of the Autel Enterprise App. When the calibration process begins, the aircraft tail LED turns yellow and blinks.
2) Hold the aircraft to keep it in a horizontal direction, and rotate the aircraft 360° horizontally until the LED indicator on the rear arms of the aircraft turns green and solid.
3) Hold the aircraft to keep it in a vertical direction with the nose up, and rotate the aircraft 360° vertically until the LED indicator on the tail of the aircraft turns green and solid.
4) Hold the aircraft with its nose facing left and its sides facing down, and rotate the aircraft 360° sideways until the LED indicator on the tail of the aircraft turns green and solid.

Remarks

- If the calibration fails, the LED indicator on the rear arms of the aircraft will turn solid red, and the above steps should be repeated at this time.

6.2.2 IMU Calibration

The IMU has been calibrated at the factory, and no user calibration is required under normal conditions. If the acceleration and angular velocity of the aircraft are abnormal, please follow the steps below to calibrate it.

1) After turning on the aircraft and the remote controller, click "Settings" > "IMU Calibration" > "Start Calibration" in the main interface of the Enterprise App. When the calibration process begins, the aircraft tail LED turns yellow and blinks.
2) Fold up the arms and place the aircraft flat on the ground.
3) Turn the aircraft over 180°, lay the aircraft facing up, and be careful not to bump the upward-looking camera.
4) Put the left side of the aircraft flat on the ground.
5) Put the right side of the aircraft flat on the ground.
6) Fold the arms, turn the nose up, and be careful not to bump the rear camera.

Remarks

- Place the aircraft according to the Autel Enterprise App Tips, and keep the aircraft in a static state.
- Please place the aircraft on a flat ground, and do not move, shut down or restart the aircraft during the calibration process.
- During IMU calibration, the gimbal will not work.

6.3 Aircraft Care and Maintenance

To ensure the best performance of EVO Max 4T, please carefully read and follow the Maintenance References in this section.

Warning

- Do not store the aircraft in a place with high humidity. If the aircraft accidentally falls into water, do not turn on the power immediately. This behavior will cause permanent damage to the aircraft.
- Autel Robotics recommends that you regularly check the various parts of the aircraft and related products to see if they have been loosened, make abnormal noises or malfunctioned due to strong impacts. If you have any questions, please contact Autel Robotics technical support personnel or authorized dealers.
- If you need to store or transport the aircraft for a long time, please ensure that the protective cover of the gimbal is installed firmly, the propeller is removed, the arms are folded, and the aircraft and related parts are accurately stored in the slots inside the rugged case to prevent damage to the internal electronic components. Devices, cameras, sensors and other components cause damage.

Important

- Do not allow the camera to touch or immerse in liquids. If the camera accidentally falls into water, wipe it with a soft dry cloth in time and place it in a relatively dry environment.
- Do not use liquids containing volatile components such as ethanol to clean the surface of the camera lens, vision systems, infrared sensor lens and auxiliary light.

6.3.1 Power System Inspection

Table 6-1 Power System Inspection

Type	Process
Motor Rotation	1) Extend the arms and maintain this position. 2) Remove the propellers individually and visually check from above the rotor to check whether there are hidden foreign objects in the inner chamber of the rotor, and clean them carefully so as not to scratch the coils. 3) Rotate the motor rotor to check for jamming and scratches, and visually inspect the motor rotor and motor base to check for foreign objects or interference. 4) When checking the rotation of the motor, there are phenomena such as jamming and scratching, and flying is prohibited, and repair and maintenance are required.
Motor and Arms are Fixed	1) Shake the motor vertically to the axis of the motor to check whether the motor fastening screws are loose or the arm is aging. 2) When the motor becomes loose, it needs to be repaired and maintained.
Propellers	1) Visually inspect the propeller for obvious deformation, severe wear, damage and cracks, and whether there are attachments on the surface. 2) Use a dry soft cloth to wipe the propellers until they are clean and free of foreign objects. 3) When the blades are obviously deformed, severely worn, notched, or cracked, stop flying and replace the blades.

6.3.2 Aircraft Frame Inspection Items

Table 6-2 Aircraft Frame Inspection Items

Inspection	Process
Aircraft Appearance	Make sure the exterior of the body is clean with no signs of damage or deformation. If there are stains, please use a clean soft cloth to wipe the body, especially the infrared sensing system and vision system lenses and heat dissipation vents.
Aircraft Screws	Make sure that the screws of the whole fuselage are not falling off or loosening, especially the connecting position of the motor and the arm tube, and the connecting position of the arm and the fuselage.
Folding of Arms	1. Make sure that the 2 screws on each arm, a total of 8 screws are not loose or fall off. 2. Make sure the arm attachments are free from breakage and cracks. 3. Make sure that there is no obvious gap between the arm and the fuselage after the arm is fully extended. 4. Make sure that when folding the arms, the arms are folded in place, smoothly and without jamming.
Arm Lights	Make sure that the surface is free from dirt and damage.
Arm Legs	Make sure that the arm legs and the arm are firmly fixed, and the screws are not loose or falling off.
Battery Compartment	1. Make sure the battery connector is free of dirt, water and corrosion. If there are water stains and dust, wipe them clean. 2. Make sure that the screws of the battery unlock buttons on both sides are not loose or fall off. 3. Make sure the battery unlock button springs back firmly. 4. After installing the battery, make sure that the battery unlock button can bounce back normally without obvious shaking.
Data Interface	1. Wipe off foreign matter near the interface with gauze first. 2. If the interface has been used, remove the connecting cable, and then illuminate the interface with a light to check whether there are foreign objects in the interface. 3. If there are foreign objects, please use tweezers to remove them, such as small stones and small pieces of paper. 4. If there is a gel-like foreign matter in the interface, please wipe it off with gauze. 5. Put the aircraft in a tilted state, with the interface facing downwards, use gauze, a small brush and other tools to remove other powdery foreign matter in the interface, pay attention to the cleaning method, and clean the interface from the inside out.
microSD Card Interface	1. Make sure there are no foreign objects in the microSD card slot, and the microSD card can be removed and installed normally. 2. Make sure the microSD card reads and writes normally.
Waterproof Rubber Plug	Make sure that the rubber plug is not damaged or loose.

Vents	Make sure that the cooling vents are unobstructed and unobstructed, and that the cooling fan does not freeze or make abnormal noises.
Dampener plate	1. Make sure that the dampeners are not damaged, loose, or easily broken due to aging. 2. Make sure that the screws connecting the dampeners to the fuselage are not loose.
Gimbal Camera	1. Move the tilt axis of the gimbal up to 90° to ensure that the camera operates and locks normally. 2. Make sure the lens is not damaged or cracked.
Infrared perception system and vision system lenses, auxiliary light, beacon	1. Wipe the lenses with a soft cloth. 2. Make sure that all lenses are free from falling off and cracked. 3. Make sure that the auxiliary light and beacon are not falling off, loose or cracked.

6.3.3 Storage and Maintenance

Every part of the aircraft should be carefully inspected after any collision or crash.

Important

- Store the aircraft and its accessories out of the reach of children and pets.
- Store the aircraft and its accessories in a cool, dry place.
- Make sure the aircraft is kept away from excessive humidity and a high temperature storage environment.
- The recommended storage temperature for the aircraft is 22℃ to 28℃(72℉ to 82℉).

6.4 Battery Maintenance

6.4.1 Battery Maintenance

Warning

To prolong battery life, avoid the following situations:

- Avoid placing the battery in an environment above 28℃ for a long time. The ideal storage temperature is 22℃ to 28℃(72℉ to 82℉).
- Avoid long-term full battery storage. In order to protect the battery, the BMS has a self-discharge function, but the self-discharge will last for 2-3 days. It is not recommended to trigger this function. It is recommended to charge it to 60~75%.
- Avoid low battery situations. If the power is too low, BMS will enter ultra-low power protection.
- Avoid placing the battery in a high-humidity and high-salt environment for a long time, which may damage the interface and shell.
- Avoid unofficial chargers. The voltage and current output by unofficial chargers cannot fully meet the characteristics of the battery cells, which may cause damage to the

batteries.
- Avoid leaving the charger plugged in for a long time.

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

1. It is recommended to perform battery maintenance every 50 times of battery cycle.
2. The idle time reaches 3 months.
3. Occasionally, there are situations that affect battery life, you can try maintenance and repair.
4. The App reminds the user when the battery needs maintenance.

6.4.2 Battery Maintenance Check Items

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

6.4.3 Standard Charging and Discharging Process

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

1) Charge the battery to 100% and let it sit for 24 hours.
2) Insert the battery into the aircraft to fly, control the aircraft to land when the remaining power is less than 20%, and then take out the battery.
3) Let the battery stand for 1 hour.
4) After the above operations are completed, a standard battery charging and discharging operation is completed.

6.5 Wearable Parts List

Table 6-3 Wearable Parts List

No.	Type	Quantity	Remarks
1	Propeller CW	4	Each motor uses 2 CW or CCW Propellers
2	Propeller CCW	4	
3	Powered Motor	4	Replacement only during deep maintenance (every 900 service hours/every 3 years).
4	Leg of front arm	2	/
5	Leg of rear arm	2	/

6	Arm Connector Cover	4	/
7	Battery Unlock Button	2	/
8	Air Inlet Dust Filter	1	/
9	Air Outlet Dust Filter	1	/
10	Remote Controller sticks	2	/

6.6 Warranty Policy

Important

- The warranty period may vary according to local laws and regulations.

Table 6-4 Warranty Period for Main Parts

Main Components	Warranty Period
Flight Control System	12 months
Fuselage	12 months
Motor	12 months
ESC Module	12 months
Antenna	12 months
Gimbal Camera	12 months

Table 6-5 Warranty period for other parts

Other Parts	Warranty Period
Battery	12 months and the number of cycles is less than 300
Smart Battery Station	12 months
Remote Controller	12 months
Shipping Box	3 months

Appendix A Product Specifications

A.1 Aircraft

Aircraft	
Weight	3.57 lbs (1620g, battery and gimbal included)
Max Takeoff Weight	4.41 lbs (1999g)
Dimensions	562×651×147mm (unfolded, incl. propellers) 318×400×147mm (unfolded, excl. propellers) 257×145×131mm (folded, excl. propellers)
Diagonal Wheelbase	1.53 ft (466mm)
Max Ascent Speed	8m/s
Max Descent Speed	6m/s
Max Horizontal Flight Speed* (windless near sea level)	23m/s *Maximum speed in Ludicrous Mode is 19m/s in EU regions.
Max Service Ceiling Above Sea Level	13,124 ft (4000m)
Max Flight Time (windless)	42 minutes
Max Hovering Time (windless)	38 minutes
Max Wind Resistance	27mph* *Takeoff and landing can withstand wind speeds up to 27mph (12m/s).
IP Rating	IP43
Max Tilt Angle	35°
Max Angular Velocity	Pitch: 300°/s, Yaw: 120°/s
Operating Temperature	-4℉ to 122℉ (-20℃ to 50℃)
Internal Storage	128GB internal storage, with 64GB of available space* (Remaining available space will vary with different firmware versions)

Operating Frequency	2.4GHz/5.8GHz 5.2GHz* (only applicable for FCC, CE, and UKCA regions). 900MHz* (only applicable for FCC regions).
GNSS	GPS+Galileo+BeiDou+GLONASS
Hovering Accuracy	**Vertically:** ±0.1 m (when vision positioning works normally) ±0.5 m (when GNSS works normally) **Horizontally:** ±0.3 m (when vision positioning works normally) ±0.5 m (when GNSS works normally)
Wi-Fi Protocol	802.11a/b/g/n/ac/ax Supports 2×2 MIMO Wi-Fi
Wi-Fi Operating Frequency	2.400-2.4835GHz 5.150-5.250GHz (CE/FCC/MIC) 5.725-5.850GHz* (except MIC)
Wi-Fi Transmitter Power (EIRP)	**2.400-2.4835GHz:** FCC: <30dBm; CE/SRRC/MIC: <20dBm **5.150-5.250GHz:** FCC/CE/MIC: <22dBm **5.725-5.850 GHz:** FCC/SRRC: <21dBm CE: <14dBm
Gimbal	
Mechanical Range	**Pitch**: -135° to 45° **Roll**: -45° to 45° **Yaw**: -45° to 45°
Controllable Range	-90° to 30°
Stability System	3-axis mechanical gimbal (pitch, roll, yaw)
Max Control Speed (Pitch)	200°/s
Angular Vibration Range	<0.005°
Zoom Camera	
Sensor	1/2" CMOS, Effective pixels: 48M

Lens	Focal Length: 11.8-43.3mm (35mm, equivalent: 64-234mm) Aperture: f/2.8-f/4.8 Focusing distance: 5m~∞
Exposure Compensation	±3EV 0.3EV/step
ISO Range	**Normal Mode:** Auto: ISO100-ISO6400 **Manual:** Photo: ISO100-ISO12800 Video: ISO100-ISO6400
Shutter Speed	Photo: 8s-1/8000s Video: 1s-1/8000s
Max Photo Resolution	8000×6000
Max Video Resolution	7680×4320
Wide-Angle Camera	
Sensor	1/1.28 CMOS, Effective pixels: 50M
Lens	DFOV: 85° Focal length: 4.5 mm (equivalent: 23 mm) Aperture: f/1.9 AF motor: 8-line SMA, PDAF focusing Focusing Distance: 1m ~ ∞
Exposure Compensation	±3EV 0.3EV/step
ISO Range	**Auto:** Photo: ISO100-ISO6400 Video: ISO100-ISO64000 (Night mode: up to ISO64000) **Manual:** Photo: ISO100-ISO12800 Video: ISO100-ISO6400
Shutter Speed	Photo: 8s-1/8000s Video: 1s-1/8000s
Max Video Resolution	3840×2160
Photo Size	4096×3072
Thermal Camera	
Thermal Imager	Uncooled VOx Microbolometer

Lens	FOV: 42° Focal length: 13mm Aperture: f/1.2 Focusing Distance: 6m~∞
Infrared Radiometric measurement Accuracy	±3℃ or reading ±3% (using the larger value) @ ambient temperature range from -4℉ to 140℉ (-20℃ to 60℃)
Video Resolution	640×512 @25FPS
Photo Size	640×512
Pixel Pitch	12 um
Radiometric Measurement Method	Center measurement Pot measurement Rectangular measurement
Radiometric Temperature Range	-4℉ to 302℉, 32℉ to 1022℉ (-20℃ to 150℃, 0 to 550℃)
Temperature Alert	High and low temperature alarm thresholds Reporting coordinates and temperature values
Palette	White Hot/Black Hot/Searing Rainbow/Grey/Ironbow/Cold and Hot
Laser Range Finder	
Measurement Accuracy	± (1m + D*×0.15%) where D is the distance to a vertical surface
Measuring Range	5-1200m
Image Transmission	
Operating Frequency	2.4GHz/5.8GHz 900MHz* (only applicable to FCC regions).
Max Transmission Distance (unobstructed, free of interference)	FCC: 12.4 miles/20km CE: 4.9 miles/8km
Transmitter Power (EIRP)	**2.4GHz:** FCC: <30dBm; CE/SRRC/MIC: <20dBm **5.8GHz:** FCC/SRRC: <27dBm; CE: <14dBm **5.15-5.25GHz:** FCC/CE: < 23dBm **902-928MHz:** FCC: <30dBm **5.65-5.755GHz:** MIC: <27dBm

Visual Sensing System	
Obstacle Sensing Range	Forward: 19.7-1220.5in (0.5-31m) Backward: 19.7-984.3in (0.5-25m) Sidewards: 19.7-1023.6in (0.5-26m) Upward: 0.66-85.3ft (0.2-26m) Downward: 0.98-75.5ft (0.3-23m)
FOV	**Forward/Backward Sensor:** 60°(H), 80°(V) **Upward/Downward Sensor:** 180° (sidewards), 120° (forwards, backwards)
Operating Environment	**Forward, Backward, Sidewards, Upward:** If the surface has rich texture, under sufficient lighting environment (>15 lux, normal indoor fluorescent lighting environment) **Downwards:** If the surface is a diffuse material with a reflectivity >20% (walls, trees, humans, etc.), under sufficient lighting environment (>15 lux, normal indoor fluorescent lighting environment)
Millimeter-wave Radar Sensing System	
Frequency	60GHz/24GHz* *For 60GHz use, please fly safely and comply with your local laws and regulations.
Sensing Range	**60GHz radar:** Upward: 0.98-787.4in (0.3-20m) Downward: 5.9-3149.6in (0.15-80m) Forward and Backward: 0.98-98.43ft (0.3-50m) **24GHz radar:** Downward: 2.62-39.4ft (0.8-12m)
FOV	**Horizontal (6dB):** ±60°/±22° (60GHz/24GHz) **Vertical (6dB):** ±30°/±20° (60GHz/24GHz)
Operating Environment	**60GHz Millimeter-wave Radar Sensing System:** Supports all-weather obstacle avoidance for glass, water, wires, buildings, and trees in 4 directions: forwards, backwards, and above and below the aircraft. Its obstacle avoidance distance varies with the obstacle's ability to reflect electromagnetic waves and its surface size. **24GHz Millimeter-wave Radar Sensing System:** Supports downward sensing, and its sensing range varies by the ground material. For example, the sensing range of cement ground is 12 meters, and the sensing range of grass with a thickness of more than 3cm is less than 6 meters.

Radar and Visual Sensing Systems	
Sensing Range	Forward & Backward: 11.8-1968.5in (0.3-50m) Sidewards: 19.7-1023.6in (0.5-26m) Upward: 0.66-85.3ft (0.2-26m) Downward: 0.49-262.5ft (0.15-80m) (60GHz radar)
FOV	**Forward/Backward Sensor:** 80°(H), 120°(V) **Upward/Downward Sensor:** 180° (sidewards), 120° (forwards & backwards)
Operating Environment	**Forward, Backward, Upward, Downward:** Supports all-weather obstacle avoidance for various conditions, including water, forests, buildings and high voltage lines. At least one of the 2 conditions should be met: sufficient lighting or the obstacle has a strong reflection ability to electromagnetic waves. **Sidewards:** If the surface has rich texture, under a sufficient lighting environment (>15 lux, normal indoor fluorescent lighting environment)

A.2 Remote Controller

Autel Smart Controller V3	
Screen	7.9 inches 2000 nits maximum brightness 2048×1536 resolution
Battery	Capacity: 5800mAh Voltage: 11.55V Battery Type: Intelligent Lithium Ion Battery Energy: 67Wh Charging time: 120 minutes
Operating Time	2.5 hours (Max brightness) 4.5 hours (50% brightness)
Max Transmission Distance (without interference)	FCC: 12.4 miles/20km CE: 4.9 miles/8km
IP Rating	IP43
Storage	128GB
GNSS	GPS+GLONASS+Galileo+Beidou

Transmitter Power (EIRP)	**2.4GHz:** FCC: <28dBm; CE/SRRC/MIC: <20dBm **5.8GHz:** FCC/SRRC: <28dBm; CE: <14dBm **902-928MHz:** FCC: <28dBm **5.65-5.755GHz:** MIC: <31dBm
Operating Temperature	-4℉ to 104℉ (-20℃ to 40℃)
Wi-Fi Protocol	Wi-Fi Direct, Wi-Fi Display 802.11a/b/g/n/ac Supports 2×2 MIMO Wi-Fi
Wi-Fi Operating Frequency	2.400-2.4835GHz 5.150-5.250GHz* (MIC only) 5.725-5.850GHz* (excluding MIC)
Wi-Fi Transmitting Power (EIRP)	**2.400-2.4835GHz:** FCC: <23dBm; CE/SRRC/MIC: <20dBm **5.150-5.250GHz:** MIC: <17dBm **5.725-5.850 GHz:** FCC/SRRC: <22dBm CE: <14dBm

A.3 Battery

Aircraft Battery	
Capacity	8070mAh
Voltage	14.88V
Battery Type	LiPo 4S
Energy	120Wh
Net Weight	1.15 lbs (520g)
Charging Temperature	-4°F to 113°F (-20°C to 45°C) (When the temperature is lower than 41°F (5°C), the self-heating function will be automatically activated. There should be at least around 10% of remaining power for heating.)
Hot Swappable	Supported