## 5.3.2 Turning On/Off the Smart Battery

### ■ Turning On the Smart Battery

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

### ■ Turning Off the Smart Battery

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

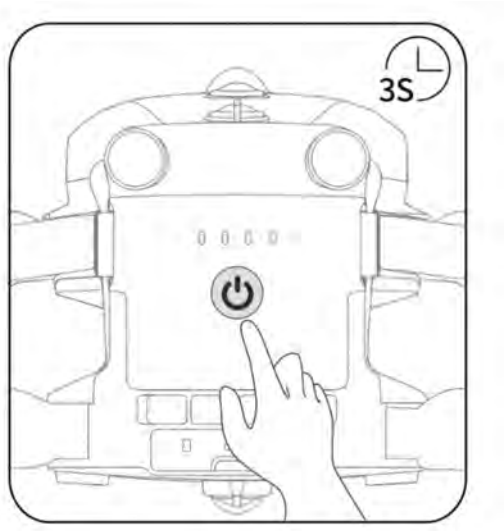



**Fig 5-2 Turn On or Off the Smart Battery**

**Important**

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

## 5.3.3 Checking Battery Level

When the smart battery is off, short press the battery power button for 1 second to check the current battery level through the battery level indicator status.
After the aircraft is powered on, users can also check the indicator status for current battery level.

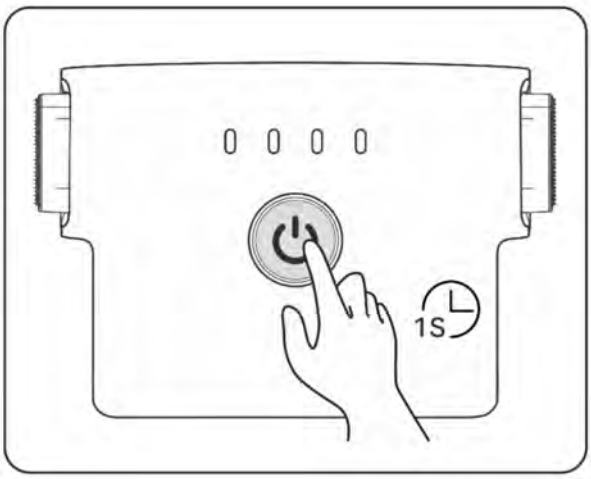
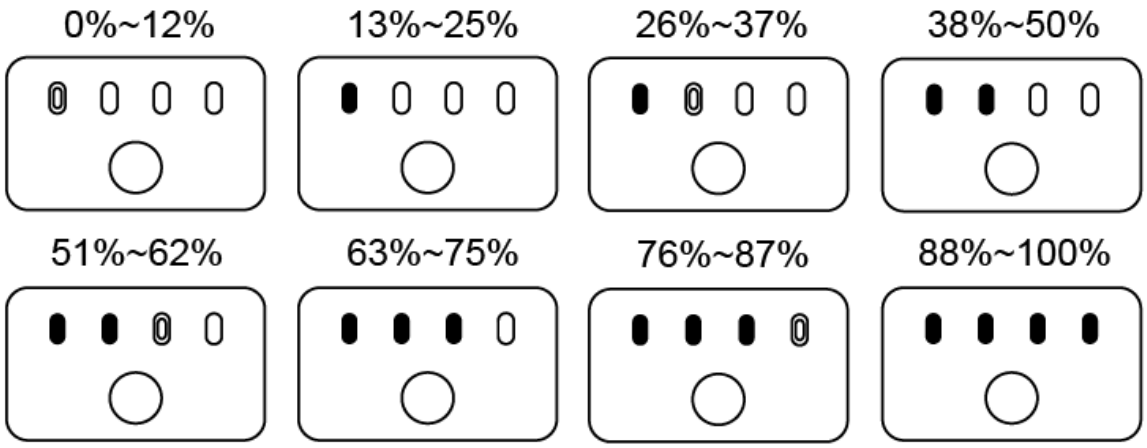



**Fig 5-3 Checking Battery Level When the Smart Battery is Off**

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




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

**Tip**

- After the aircraft is connected to the remote controller, you can check the current smart battery level of the aircraft in the top status notification bar or on the "Battery Information" interface of the flight application. For more information, see "6.3 Status Notification Bar" and "6.5 "Settings" Interface" in Chapter 6.

### 5.3.4 Smart Battery Self-heating

The smart battery has a self-heating function, which can increase the battery temperature in low-temperature environments, helping maintain good output performance.

- When the smart battery is 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. After the aircraft takes off, the battery self-heating function will be automatically turned off.

- If the smart battery is not installed in the aircraft, short press the power button for 1 second and then press and hold 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. At this point, if you want to exit the battery self-heating function, short press the power button for 1 second, and then press and hold the power button for 3 seconds.
- When the smart battery is connected to the MDX120W battery charger and the battery power is turned on, if the battery temperature is lower than 5°C, the charger will supply power to the smart battery for self-heating. Once the battery temperature reaches 15°C, the self-heating function will be turned off.

**Important**

- When the self-heating function of the smart battery is manually activated, the battery should have at least around 10% of remaining power for self-heating.

When the smart battery is in the states of self-heating and heat preservation, the statuses of the battery level indicators are shown in the following table.

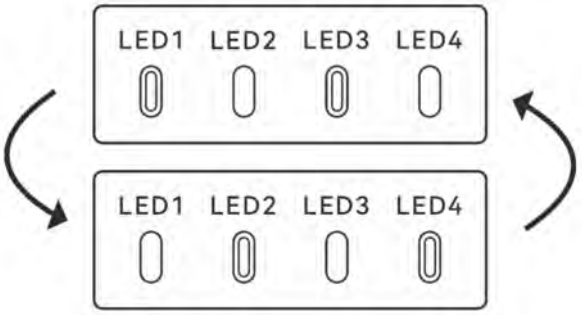



**Fig 5-4 Self-heating State**


**Fig 5-5 Heat Preservation State**

**Table 5-5 Battery Level Indicator Status**

| No. | Description |
|---|---|
| 1 | LED1, LED3 and LED2, LED4 blink alternately in groups, indicating that it is heating. |
| 2 | The 4 LEDs blink at the same time, indicating that it has entered the heat preservation state. |
| | : Green light blinking : Off |

**Warning**

- When the temperature of the smart battery is lower than -10°C or higher than 70°C, the

aircraft will not be allowed to take off. It is recommended to wait until the self-heating is over or the battery naturally cools down to an appropriate temperature before operating.

- When the temperature of the smart 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 operating time of the aircraft. In low-temperature environments, make sure that the battery is fully charged before taking off.
- If the battery level of the smart battery is lower than 50%, it is not recommended to take off. When the battery level is low, it is difficult to activate the battery, which will reduce flight safety.
- During the flight, when the flight application prompts a low battery alarm, it is recommended to immediately return to the home point or land.
- In some low-temperature environments, even if the self-heating function is activated, the battery temperature may still not reach the usable temperature. In such cases, please add insulation measures during the heating process.
- In order to get the best performance from the smart 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 you keep the battery warm in advance to shorten the self-heating time.

### 5.3.5 Charging the Smart Battery

Connect the charging interface of the official battery charger MDX120W to the notch of the metal electrode of the smart battery, and connect the AC plug to the AC power supply (100-240 V~ 50/60 Hz).

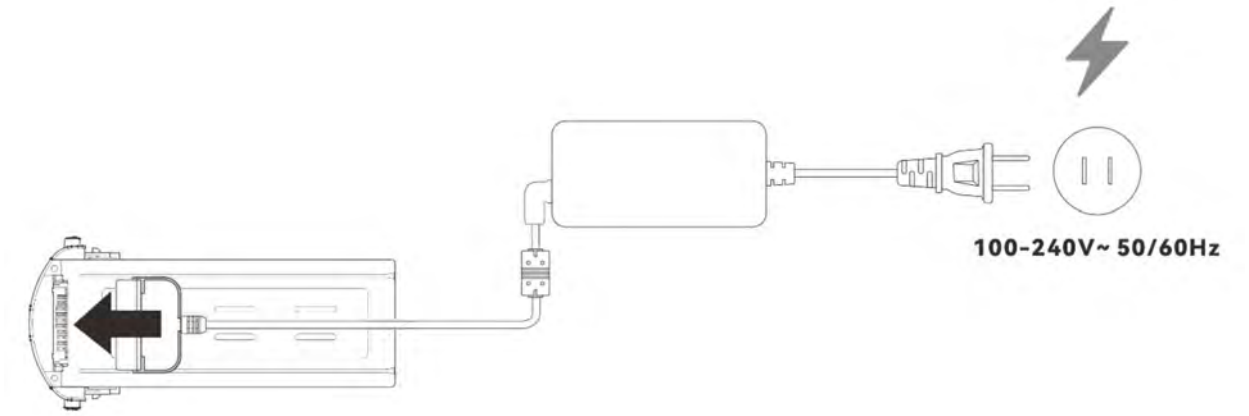
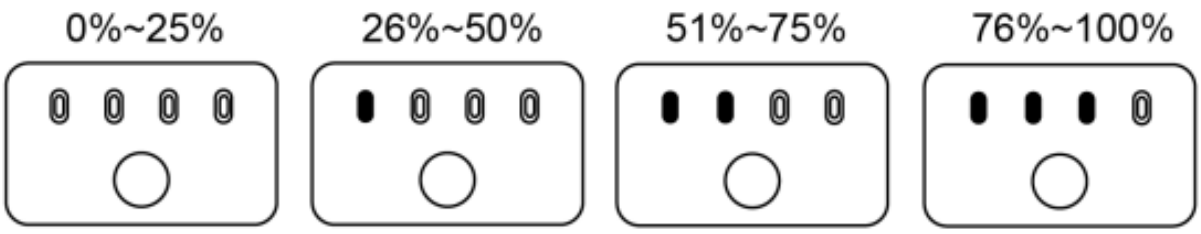



**Fig 5-6 Use the Battery Charger to Charge the Smart Battery**

**Table 5-6 Battery Level Indicator Status (While Charging)**




●: Green light is always on ◎: Green light blinking

**⚠ Warning**

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

**Note**

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

**Table 5-7 Other Battery Indicator Warning Instructions**

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

| | | | | |
|---|---|---|---|---|
| | | | | during battery discharge. |

: Indicator light blinking : Off

## 5.4 Storing and Transporting the Smart Battery

When storing the smart battery, keep the battery away from water or heat sources and store it in a dry, well-ventilated environment at room temperature.
Ideal storage conditions: The battery level is at around 60%, the ambient temperature is between 22°C to 28°C, and the ambient humidity is 65%±20% RH.
The energy of the ABX40 smart battery is 120 Wh and that of the ABX41 smart battery is 136.5Wh. Please refer to local lithium battery transportation policies for battery shipping or carrying.

**⚠ Warning**

- Before storing or transporting the smart battery, please turn off the battery.
- Store the smart battery out of the reach of children and pets.
- Store the smart battery away from direct sunlight, water, or reactive chemicals.
- Do not expose the smart battery to open flame, explosives, or other hazards.
- Do not store the smart battery in extreme temperatures. Otherwise, the lifespan of the battery may be shortened and the battery may even become damaged or ineffective. If the battery is not used for more than 1 day, it should be stored in -20℃~+35℃.
- Do not place the smart battery in a microwave or pressure cooker.
- Do not place the smart battery directly on conductive surfaces (such as metal shells or panels).
- Do not place heavy objects on the smart battery. When subject to an external force, the battery may be damaged or even catch fire or explode.
- Do not store or transport the smart battery with sharp objects, watches, metal necklaces, earrings, or other metal items.
- Do not transport batteries that have a damaged appearance or a battery level of more than 30%.
- If the smart battery is left idle for a long time, please charge it every three months to avoid a shortened battery lifespan resulting from long-term low battery levels.

## 5.5 Maintaining and Handling the Smart Battery

### 5.5.1 Maintaining the Smart Battery

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

- It is recommended to perform battery maintenance for the smart battery every 50 times of battery cycle.
- The idle time of the smart battery reaches 3 months.

- Occasionally, there are situations that affect the lifespan of the smart battery. In this case, you can try maintenance and repair.
- The flight application reminds you when the smart battery needs maintenance.

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

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

### 5.5.2 Standard Charging and Discharging Process

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

1. Use the battery charger MDX120W included in the standard aircraft kit to charge the smart battery to 100% and let the battery sit for 1 hour.
2. Insert the smart battery into the aircraft to fly, control the aircraft to land when the remaining battery level is less than 20%, and then take out the battery.
3. Let the smart battery sit for 8 hours.
4. After the above operations are completed, a standard battery charging and discharging operation is completed.

### 5.5.3 Smart Battery Replacement Standards

- There are obvious bulges, leakage, and damage on the smart battery surface.
- Damage to or irreparable rust on the metal contacts at the power supply interface of the smart battery.
- After the number of cycles of the smart battery reaches 200, it is recommended to replace the battery with a new one.
- After 2 consecutive standard charge and discharge operations, if the abnormal battery still cannot be repaired, it is recommended to replace it with a new one.

### 5.5.4 Recycling the Smart Battery

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

**Important**

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

# Chapter 6 Flight Application

## 6.1 Software Introduction

The flight application is a flight control software developed by Autel Robotics for enterprise applications. The software integrates waypoint mission, polygon mission and other mission modes and is easy to quickly get started. The latest version (V2.1.119 and higher versions) supports Single Link and A-Mesh Link modes.

| Note |
| --- |
| ● This chapter is based on V2.1.119 version of the flight application. Some UI interfaces may differ due to version upgrade. Please refer to the UI interfaces actually displayed. |

## 6.2 Main Interface

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


**Fig 6-1 Main Interface of the flight application (Fusion 4T/4T XE Gimbal and in A-Mesh Link mode)**

**Table 6-1 Details of the Main Interface of the flight application**

| No. | Name | Description |
|---|---|---|
| 1 | Status Notification Bar | For details about the status notification bar, please refer to "6.3 Status Notification Bar" in this chapter.<br>In Single Link:<br>➢ It displays the aircraft system's alarm notification and information, flight mode, mission status, RC battery, RC signal, GNSS signal, aircraft battery, OA status, and flight status.<br>In A-Mesh Link mode:<br>➢ When all aircrafts are selected ("ALL" selected), it only displays the aircraft system's alarm notification and information and RC battery.<br>➢ When one aircraft in the team is selected, it displays the aircraft's alarm notification and information, flight mode, mission status, RC battery, RC signal, GNSS signal, aircraft battery, OA status, and flight status. |
| 2 | Toolbar | Offers quick access to certain frequently used functions.<br>Users can add icons of frequently used functions from "Shortcuts" on the toolbar. |
| 3 | "Camera" Full Screen Interface | Displays the image transmission screen of the aircraft selected currently. Users can control the gimbal camera to shoot or record in this interface.<br>➢ When all aircrafts are selected ("ALL" selected), it displays the image transmission display of the aircraft selected before all aircrafts are selected. |
| 4 | "Map" Preview Interface | Provides access to the full-screen "Map" interface. |
| 5 | Camera Function Access | Offers access to the gimbal camera operations and settings.<br>➢ When all aircrafts are selected ("ALL" selected), " " icon is displayed in grey and is unavailable. |
| 6 | Device Preview Switch | In A-Mesh Link mode, it displays all aircrafts in the team (which does not appear in Single Link), users can select an aircraft to set and control it solely.<br>➢ When all aircrafts are selected ("ALL" selected), " " icon is displayed in grey and is unavailable. |
| 7 | Toolbar Hide Button | Tap it to hide the toolbar. |

**Tip**

- The flight application can automatically identify the gimbal camera model mounted on the aircraft and adjust the display content of the main interface accordingly. When an aircraft with a different gimbal camera model is connected to the remote controller, the display content on the main interface of the flight application may vary.

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

| No. | Icon | Meaning | Description |
|---|---|---|---|
| 1 |  | Dual-Screen Mode | Tap this icon to enter the dual-screen mode.<br>Fusion 4T Gimbal/Fusion 4T XE Gimbal: The left and right sides of the remote controller screen can display any two of the three split-screen interfaces, which are "Map", "Zoom", and "Infrared".<br>Fusion 4N Gimbal: The left and right sides of the remote controller screen can display any two of the four split-screen interfaces, which are "Map", "Wide Angle", "Night Vision", and "Infrared". |
| 2 |  | Three-Screen Mode | Tap this icon to enter the three-screen mode. The flight application defaults to the three-screen mode.<br>Fusion 4T Gimbal/Fusion 4T XE Gimbal: The left side of the remote controller screen displays the "Map" split-screen interface, the upper-right side displays the "Zoom" split-screen interface, and the lower-right side displays the "Infrared" split-screen interface.<br>Fusion 4N Gimbal: The left side of the remote controller screen defaults to the "Map" split interface, the upper-right side defaults to the "Wide Angle" split-screen interface, and the lower-right side defaults to the "Night Vision" split-screen interface. Each split-screen interface can be switched to the "Infrared" split-screen interface. |
| 3 |  | Four-Screen Mode | Tap this icon to enter the four-screen mode. This mode is only supported by Fusion 4N Gimbal.<br>In the four-screen mode, the upper-left side of the remote controller screen displays the "Wide Angle" split-screen interface, the lower-left side displays the "Map" split-screen interface, the upper-right side displays the "Night Vision" split-screen interface, and the lower-right side displays the "Infrared" split-screen interface. |

| | | | |
|---|---|---|---|
| 4 | | Maximize Window | Tap this icon to adjust a split-screen interface to the corresponding full-screen interface. |

**Tip**

- In any camera full-screen interface or camera split-screen interface, you can swipe up anywhere to hide all function icons and swipe down to restore the display of function icons.

## 6.3 Status Notification Bar

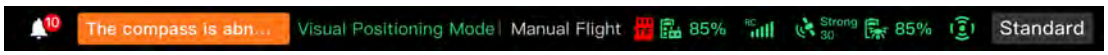



**Fig 6-2 Status Notification Bar of the flight application**

**Table 6-3 Details of the Status Notification Bar of the flight application**

| No. | Icon | Meaning | Description |
|---|---|---|---|
| 1 | | Status and Fault Warning | Displays the current warning information of the aircraft:<br>➢ Gray indicates that the remote controller is not connected to the aircraft.<br>➢ Orange indicates a medium-level warning. In this case, the aircraft will not be prohibited from taking off but should pay attention to flight safety.<br>➢ Red indicates a high-level warning. In this case, the aircraft will be prohibited from taking off and can take off only after you solve the fault. |
| 2 | | Flight Status | Displays the current flight status.<br>There are 3 modes: GNSS mode, visual positioning mode, and attitude mode. For more information, see "3.9.1 Flight Status" in Chapter 3. |
| 3 | Manual Flight | Mission Status | Displays the current mission type and mission status of the aircraft. |
| 4 | TF | No SD Card | Indicates that there is no microSD card installed in the aircraft currently. |
| 5 | | Remote Controller Battery | Displays the current battery level of the remote controller. |
| 6 | RC | Remote Controller Signal Status | 1. Displays the current communication signal status between the remote controller and the aircraft. |

| | | | |
|---|---|---|---|
| | | | 2. Tap this icon to display the specific signal status: When the signal is 3-5 grids, the remote controller signal is displayed as strong. When the signal is 1-2 grids, the remote controller signal is displayed as weak.<br>3. When the remote controller is not connected to the aircraft, the remote controller signal is displayed in gray color. |
| 7 |  | RTK Signal Status | After a RTK module is installed on the aircraft, it displays the RTK signal status and positioning accuracy level of the aircraft. |
| 8 |  | GNSS Signal Status | 1. Displays the current GNSS signal status of the aircraft.<br>2. Tap this icon to display the specific signal status and satellite connection status.<br>3. If the aircraft receives no GNSS signal, the GNSS signal is displayed in gray color. |
| 9 |  | Aircraft Battery | 1. Displays the current battery information of the aircraft.<br>2. Tap this icon to display the battery level, voltage, and temperature of the aircraft battery. |
| 10 |  | Obstacle Avoidance System | Displays the current activation status of the aircraft obstacle avoidance system.<br>➢ Green indicates that the obstacle avoidance system is activated.<br>➢ Red indicates that the obstacle avoidance system is deactivated. |
| 101 |  | Speed Mode Display | Displays the current speed mode of the aircraft. Four modes are available, that is, Slow mode, Smooth mode, Standard mode, and Ludicrous mode. You may tap this icon to switch flight mode. For more information about the speed modes, see “3.9.2 Flight Modes” in Chapter 3. |

## 6.4 Toolbar

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

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

**Tip**

- You can add a maximum of 12 function icons to the toolbar, some functions need aircraft hardware support and unavailable functions will be displayed in grey.
- When all aircrafts are selected (“ALL” selected), some functions will be displayed in grey and be unavailable.

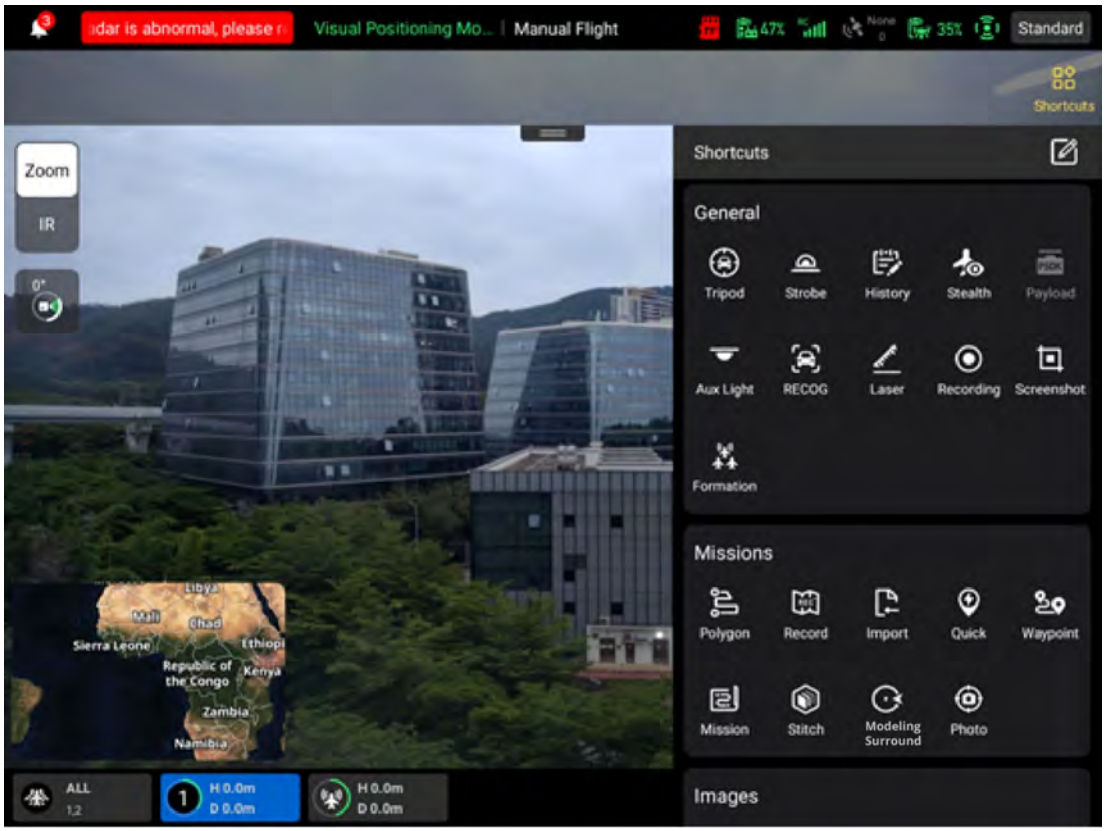



**Fig 6-3 Toolbar**

**Table 6-4 Toolbar Details**

| No. | Icon | Name | Description |
|---|---|---|---|
| 1 | | Shortcuts | Tap this icon to enter the “Shortcuts”, where you can view all shortcut function icons. |
| 2 | | Edit | Tap this icon to add function icons from "Shortcuts" to the "Toolbar" or move the function icons in the "Toolbar" to "Shortcuts". |
| 3 | | Tripod | Tap this icon, and the aircraft camera will automatically lock onto the selected target. |
| 4 | | Strobe | Tap this icon to turn on the strobe on the top of the aircraft fuselage. |
| 5 | | History | Tap this icon to view all history pinpoints in the |

| | | | |
|---|---|---|---|
| | | | map. |
| 6 |  | Stealth | Tap this icon, and the aircraft will turn off the arm lights, strobes, and auxiliary bottom lights after users sign the disclaimer. |
| 7 |  | Payload | Tap this icon to open function panel of the aircraft payload. |
| 8 |  | Aux Light | Tap this icon to turn on the bottom auxiliary light, which is used to improve the environment lightness when the aircraft is landing in a dark light environment. |
| 9 |  | RECOG | Tap this icon to intelligently identify the target object type. |
| 10 |  | Laser | Tap this icon to automatically measure the distance from the target point at the center of the lens to the aircraft, as well as the target point's altitude and coordinates (longitude and latitude). |
| 11 |  | Screenshot | Tap this icon to capture the current screen in a screenshot. |
| 12 |  | Recording | Tap this icon to start recording the current screen. |
| 13 |  | Formation | When all the aircrafts in the team take off and fly more than 30 meters above the ground, select all the aircrafts and tap this icon to execute formation flight. During the flight, non-relay aircrafts will approach the relay aircraft according to the set horizontal interval, and finally fly in the same direction as the relay aircraft does. |
| 14 |  | Polygon | Tap this icon to enter the "Polygon" mission editing interface. |
| 15 |  | Record | Tap this icon to record real-time attitude, motion, and other parameters of the aircraft and gimbal camera during a flight mission, which allows for repeating the operation process for the next mission. |
| 16 |  | Import | Tap this icon to import the missions (supporting KML format) saved locally into the mission library. |
| 17 |  | Quick | Tap this icon, after setting the quick mission point, the aircraft can fly to the mission point to execute |

| | | | |
|---|---|---|---|
| | | | temporary mission. |
| 18 |  | Waypoint | Tap this icon to enter the "Waypoint" mission editing interface. |
| 19 |  | Mission | Tap this icon to enter the “Missions” interface, where you can query, edit, favorite, and delete previously saved historical flight missions. |
| 20 |  | Stitch | Tap this icon to configure the remote controller to connect to a computer device with 2D/3D mapping software installed, which allows for fast mapping. |
| 21 |  | Modeling Surround | Tap this icon, the aircraft will fly in circle with the current position as the circle center. |
| 22 |  | Photo | Tap this icon, the aircraft, after flying to the target point, will recap the picture and videos shot or recorded last time. |
| 23 |  | Album | Tap this icon to view materials from the aircraft's album and the local album and download or delete them. |
| 24 |  | Defog | Tap this icon to make the shooting or recording scene more transparent and enhance color contrast, which is used to eliminate the "fogging phenomenon" in the picture or the lack of picture clarity caused by smog. |
| 25 |  | Pro Setting | Tap this icon to make professional settings for the gimbal camera parameters. |
| 26 |  | Brightness | Tap this icon to move the slider left and right to adjust the brightness of the camera. |
| 27 |  | Night Mode | Tap this icon, and the Wide angle Camera and Night Vision cameras will enter night shooting mode. Even when shooting in a low-light environment, the picture will remain clear. |
| 28 |  | Single Link | Tap this icon to achieve frequency matching between a RC and an aircraft. |
| 29 |  | A-Mesh Link | Tap this icon to achieve frequency matching between up to 2 RCs and 2 aircrafts to form a team. |
| 30 |  | Aircraft | Tap this icon to place a marked point in the aircraft’s current position. |

| | | | |
|---|---|---|---|
| 31 |  | RC pinpoint | Tap this icon to place a marked point in the RC's current position. |
| 32 |  | Free pinpoint | Tap this icon to free pinpoint on the map.<br>Both Pilot Role RC and Observer Role RC can do free pinpoint operation. In the same mission, RCs in the team can share the first 10 free pinpoint marked points. Marked points that rank after 10th will be saved in the RC that conducts free pinpoint correspondingly. |
| 33 |  | Live-RC | Tap this icon to set live streaming of real-time aerial videos from the aircraft. Two streaming methods, that is, RTMP and GB28181, are supported. |
| 34 |  | Support | Tap this icon to enter the "Personal Center" interface. |
| 35 |  | Settings | Tap this icon to enter the "Settings" interface. |
| 36 |  | Flight Log | Tap this icon to view the flight logs of the aircraft or synchronize them to a third-party platform. To use this function, you need to log in to your Autel Robotics cloud service account. |
| 37 |  | Log | Tap this icon to query the flight logs of the aircraft. To use this function, you need to log in to your Autel Robotics cloud service account. |
| 38 |  | Encrypt | Tap this icon to set a security password for encrypting captured media materials. |
| 39 |  | User Manual | Tap this icon to check all usage guides of relevant flight application. |

## 6.5 "Settings" Interface

1. In A-Mesh Link mode, after all aircrafts in the team are selected ("ALL" selected), users can tap "  " icon at the lower right corner of the interface to expand aircraft quick setting panel. The detailed operations are as follows:

- In "Images" column, you can view status information (aircraft battery level, RC signal and GNSS signal) of all aircrafts and switch the aircraft gimbal camera lens.
- In "Settings" column, you can set collectively flight mode, OA mode, flight altitude, RTH altitude, and signal lost action for all aircrafts.


**Fig 6-4 Quick Setting Panel in A-Mesh Link Mode**

**Tip**

- Tap "⛶" icon at the upper right corner of the quick setting panel to fold this panel
- Tap "+" icon at the lower right corner of the quick setting panel to enter the mesh network settings interface ("my team" interface).

2. In Single Link or when taping an aircraft in the team in A-Mesh Link mode, users can tap the "⊞" icon on the right side of the toolbar, and tap "⚙" icon to enter the setting interface of the aircraft. In the setting interface, users can set parameters such as flight control, obstacle avoidance, remote controller, image transmission, battery, and gimbal.

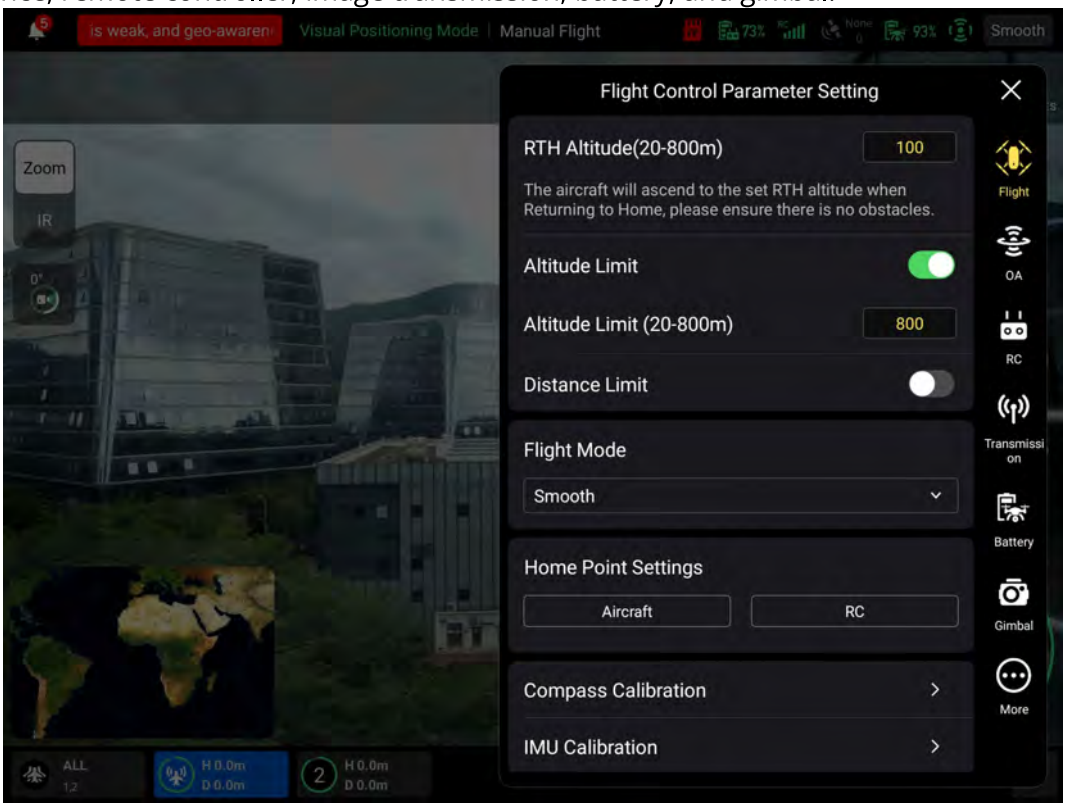



**Fig 6-5 Setting Interface (Flight Control Parameter Setting)**

## ■ Flight Control Parameter Setting

In the sidebar of the "Settings" interface, tap the "✈" icon to enter the "Flight Control Parameter Setting" interface, where you can set the relevant flight control parameters for the aircraft, as shown below.

### 1. Set RTH Altitude

Tap the "RTH Altitude" edit box and enter the value. When executing an auto-return, the aircraft will rise to the RTH altitude before starting the return process.

### 2. Turn On/Off Altitude Limit

Tap 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 of “Altitude Limit (20-800m)” that pops up below, and the aircraft can rise up to the maximum altitude specified.
- If this function is turned off, the aircraft can keep ascending according to your operation until the battery is exhausted.

### 3. Turn On/Off Distance Limit

Tap the button on the right side of "Distance Limit" to turn on or off the distance limit function.

- If this function is turned on, enter the distance limit value in the edit box of "Distance Limit (20-5000m)" that pops up below, and the aircraft will fly within a circle with the take-off point as the center and the distance limit value as the radius.
- If this function is turned off, the aircraft can keep moving according to your operation until the battery is exhausted.

### 4. Set Flight Mode

Tap the "Flight Mode" drop-down list, and then select the appropriate mode from Slow, Smooth, Standard, and Ludicrous, that is, set the default speed mode every time you open the flight application. For the meaning of each mode, see “3.9.2 Flight Modes” in Chapter 3.

### 5. Set Home Point

Tap “Aircraft” or “RC” to set the home point.

- If "Aircraft" is selected, the home point is the position where the aircraft takes off this time.
- If "RC" is selected, the home point is the current position of the remote controller.

### 6. Calibrate Compass/ IMU

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

### 7. Set Signal Lost Action

Lost action refers to the action that the aircraft will take when the aircraft is disconnected from the remote controller during flight. By default, the lost action is set to “Return to Home”.

- If “Return to Home” is selected, when the aircraft disconnects, the aircraft will automatically return to the home point.
- If "Hovering" is selected, when the aircraft disconnects, the aircraft will hover at the current position.
- If "Land" is selected, when the aircraft disconnects, the aircraft will land at the current position.

**⚠ Warning**

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

Mechanism" in Chapter 2.

**Note**

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

**Tip**

- Appropriate altitude limit and distance limit settings can improve flight safety.
- The altitude limit should not be set lower than the RTH altitude value. The altitude limit setting should comply with local (within the flight operation area) laws and regulations. Flying the aircraft in an unsuitable flight altitude may have legal risks. Please comply with the fight safety requirements of relevant areas during flight operations.
- When the aircraft initiates a return to home due to a disconnection, even if the aircraft re-connects to the remote controller, it will continue the return process. In this case, you can short press or press and hold the "Pause" button on the remote controller for 2 seconds until the RC emits a "beep" sound to pause the return process or exit the auto return, or pull the pitch stick down to exit auto return. After exiting the auto return, the RC will regain the control of the aircraft.

## ■ OA Settings

In the sidebar of the "Settings" interface, tap the "" icon to enter the "OA Settings" interface, where you can conduct the following operations:

### 1. Set Collision Avoidance Behavior

- If "Emergency stop" is selected, the safety distance can be set. In manual flight, when the aircraft encounters an obstacle, it will automatically slow down, brake and hover in place at the "safety distance" set.
- If "Bypass" is selected, the safety distance can be set. When the aircraft encounters an obstacle, it will automatically slow down and make its own decision to bypass the obstacle in any direction, be it left, right or up.
- If "Turn off" is selected, the aircraft will not automatically slow down, brake or bypass when it encounters an obstacle.

### 2. Set Warning Distance

When the aircraft detects an obstacle, it will send a warning at the warning distance as set.

### 3. Turn On/Off Radar Display

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

### 4. Turn On/Off Obstacle Detection Notification Sound

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

### 5. Turn On/Off Landing Protection

➢ If this function is turned on, the aircraft will detect whether the ground surfaces are suitable or not for landing before it lands.

**⚠ Warning**

- To ensure flight safety, it is recommended to set the obstacle avoidance behavior as “Emergency stop” or “Bypass”.
- When the flight mode of the aircraft is set to “Ludicrous”, the OA system function is unavailable.

**Tip**

- When the aircraft performs automatic missions (such as automatic return, waypoint missions, and polygon missions), the aircraft's collision avoidance behavior will be "Turn off" or "Bypass" by following the setting (when the collision avoidance behavior is set to "Emergency stop" or "Bypass" in the "OA Settings").
- After the landing protection function is turned on, if the aircraft detects that the ground surface is not suitable for landing, it will keep hovering over the landing point. In this case, you need to use the command sticks to manually control the aircraft to land at an appropriate location.

## ■ RC Settings

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

### 1. Set Stick Mode

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

### 2. Calibrate the Remote Controller

For details about RC calibration, see “4.14 Calibrating the Remote Controller” in Chapter 4.

### 3. Calibrate the Compass of the Remote Controller

For details about RC compass calibration, see “4.13 Calibrating the Remote Controller Compass” in Chapter 4.

### 4. Set RC Custom Button C1/C2

For details about RC custom button C1/C2 setting, see “4.11.1 Custom Keys C1 and C2” in Chapter 4.

### 5. Set EXP

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

## ■ Image Transmission Settings

In the sidebar of the “Settings” interface, tap the "" icon to enter the "Image Transmission Settings" interface, where you can perform following operations:

### 1. Set Image Transmission Mode

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

### 2. Set Transmission Frequency Band

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

### 3. Set Split Screen Effect

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

**Tip**

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

## ■ Aircraft Battery

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

### 1. View Basic Information of the Smart Battery

Here, you can view the real-time status of the battery and the estimated flight time of the aircraft with the current battery level.

### 2. Set Battery Warning Threshold

- Critically Low Battery Warning: Red status. The adjustable range is from 8% to 25%. When the battery decreases to this threshold, landing is triggered forcibly.
- Low Battery Warning: Orange status. The adjustable range is from 15% to 50%. The low battery warning threshold should be at least 5% higher than the critically low battery warning threshold. When the battery decreases to this threshold, auto return is triggered automatically.

### 3. Hot Swap Battery

After enabling the hot swap battery function as needed, you make the smart battery hot-swappable without shutting down the aircraft, thus eliminating the waiting time for a restart.

**Tip**

- When the smart battery output voltage exceeds the normal range, there will be a red

warning.
- When the smart battery discharge times is more than 200, there will be a red warning and users should replace the battery with new one.

### ■ Gimbal Settings

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

#### 1. Set Gimbal Pitch Sensitivity

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

#### 2. Turn On/Off Extended Pitch Angle

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

#### 3. Gimbal Calibration

For more information about how to calibrate the gimbal, see “2.12.3 Gimbal Calibration” in Chapter 2.

#### 4. Gimbal Adjustment

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

#### 5. Gimbal Parameters Reset

Tap the "Gimbal Parameters Reset" button, and then tap the "Confirm" button to reset the gimbal parameters.

**⚠ Warning**

- When operating the gimbal, please ensure the gimbal protective cover has been removed and there are no obstacles within the movement space of the gimbal.

### ■ RTK Settings*

In Single Link mode, after a RTK module is installed on the aircraft, tap “RTK”icon on the side column In the sidebar of the “Settings” interface, to enter “RTK Settings” interface, in which users can perform following operations:

#### 1. Turn On/Off RTK Positioning

After it is enabled, when the aircraft connects to the RTK service, the positioning accuracy down to centimeter can be achieved.

- When the RTK module is abnormal, please turn off the RTK positioning manually to switch the aircraft mode to GNSS mode.
- When the aircraft is flying, if you want to enable the RTK positioning, please keep the aircraft hovering until it completes satellite signal searching.

#### 2. Check RTK Network Status

After enabling RTK positioning and entering network RTK account, tap “Log In” button and conduct RTK network connection.

- If the connection is normal, “Connection Successful” will be displayed.

- If the connection is abnormal. “Connection Fail” will be displayed and failure reason will be also prompted.

### 3. Network RTK Service Configuration

Enter network RTK server address, port, account, password and mounting point to complete network RTK service configuration.

- Tap “Log In” button to log in to network RTK service, if there is abnormal network RTK configuration, a prompt will be displayed.
- Tap “History Accounts” button to check configured network RTK accounts. The aircraft supports saving multiple network RTK accounts.
- Tap “Auto Connect” button to turn on or off the auto log in function of network RTK account.

### 4. Check RTK Coordinate System

After completing RTK network connection, you can view coordinate system type, RTK positioning method, latitude and longitude, altitude, satellite searching number and mean in the RTK coordinate system.

**Note**

- Before enabling network RTK service, please connect the RC or the aircraft to the internet.
- After a RTK module is installed, the status notification bar will display RTK signal status icon synchronously.
- In multi-aircraft matching mode, RTK function cannot be enabled and the flight application will not display “RTK Settings”.

## ■ More

In the sidebar of the “Settings” interface, tap the “” icon to enter the "More" interface, where you can perform following operations:

### 1. Unit Settings

Tap "Units Settings", and then set "Speed/Distance Units", "Area Units", "Temperature Units", and "Coordinate Format" according to your needs.

### 2. Light Settings

- Turn On/Off Stealth Mode
- If stealth mode is turned on, the arm lights, strobe, and auxiliary bottom light will be turned off by default.
- If stealth mode is turned off, you can configure the strobe and auxiliary bottom light.
- Set Aux Light
- If “Auto” is selected, the auxiliary bottom light is automatically turned on or off according to ambient brightness.
- If "On" is selected, the auxiliary bottom light is always on by default.
- If "Off" is selected, the auxiliary bottom light is off by default.

### 3. Turn On/Off Visual Positioning

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

### 4. Turn On/Off GNSS

- If "Auto" is selected, the aircraft will automatically select the best GNSS positioning signal.
- If "Beidou" is selected, the aircraft will only receive GNSS positioning signals from the BeiDou Navigation Satellite System.

### 5. Turn On/Off Submit Flight Data to CAAC

According to Chinese laws and regulations, flight data must be submitted in real time to the official system of the Civil Aviation Administration of China (CAAC) via the internet.

### 6. Enter Registration No.

According to Chinese laws and regulations, real-name registration is required for aircrafts which fly within the territory. For more information, see "2.1 Legal Use Notice" in Chapter 2.

### 7. Emergency Stop Propellers During Flight

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

### 8. Target Recognition Settings

The aircraft supports recognition of four target types: "Human", "vehicle", "Boat" and "Smoke/Fire". Users can select the type or types based on their needs.

### 9. Remote ID

Enter the pilot registration number as required by the laws and regulations of the location (not in Chinese mainland). After successful input, the broadcast status of Remote ID will be prompted. For more information, see "2.1 Legal Use Notice" in Chapter 2.

### 10. Language Settings

After select corresponding language, the flight application will automatically restart and display in the chosen language.

### 11. Quick Operation

It supports "Toolbar" and "Floating Ball" for quick operation. After select one of those two, the shortcut function icons will be displayed correspondingly.

### 12. About

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

**⚠ Warning**

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

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

**Tip**

- The auxiliary bottom light is mainly used to enhance the ambient brightness of the landing point during the landing of the aircraft, improve the sensing performance of the downward visual obstacle avoidance sensing system, and ensure landing safety.
- To enter visual positioning mode, the aircraft must turn on visual positioning. For more information, see "3.9.1 Flight Status" in Chapter 3.
- When the network is poor, relevant flight data will be cached in users' local devices.

## 6.6 Attitude Ball

In Single Link, or when you tap an aircraft in the team in A-Mesh Link mode, the attitude ball of the aircraft will be displayed at the lower right corner in the interface.
The attitude ball is mainly used to dynamically display the relative positions of the aircraft, remote controller, and home point, and display the relevant attitude, flight speed, battery level, operating time, and other flight safety data of the aircraft. Any changes in the aircraft's status will be reflected in the attitude ball.

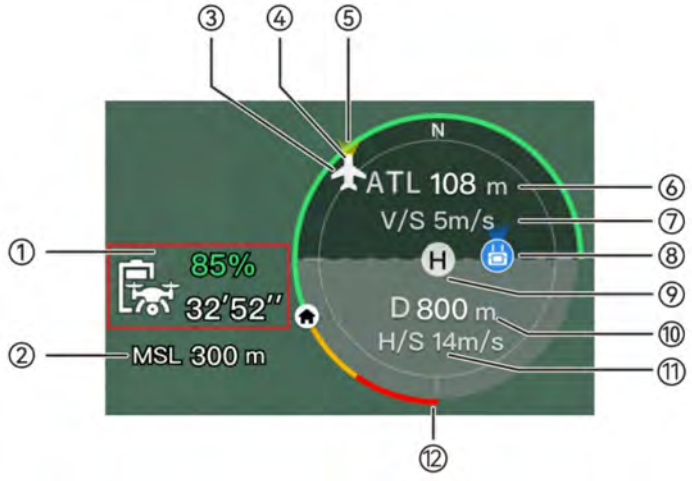



**Fig 6-6 Attitude Ball**

**Table 6-5 Attitude Ball Details**

| No. | Description | Description |
|---|---|---|
| 1 | Estimated Remaining Flight Time of the | Displays the current remaining battery level and estimated remaining flight time of the aircraft. |

| | Aircraft | |
|---|---|---|
| 2 | MSL Altitude | Refers to the current altitude of the aircraft relative to the mean sea level (MSL). |
| 3 | Aircraft Position | Displays the current position of the aircraft, which can help you observe the approximate position between the aircraft and the remote controller. |
| 4 | Aircraft Heading | Displays the current nose orientation of the aircraft. If the aircraft is no longer visible in the line of sight, the aircraft can be controlled to return to the home point based on the position and heading of the aircraft. |
| 5 | Gimbal Direction | Displays the current gimbal orientation of the aircraft. |
| 6 | Vertical Altitude | Refers to the current vertical altitude of the aircraft relative to the take-off point. |
| 7 | Vertical Speed | Refers to the current vertical flight speed of the aircraft. |
| 8 | Remote Controller Location | Displays the current position of the remote controller, which can help you observe the approximate position between the aircraft and the remote controller. |
| 9 | Home Point | Refers to the set home point of the aircraft. |
| 10 | Horizontal Distance | Refers to the current horizontal distance from the aircraft to the take-off point. |
| 11 | Horizontal Speed | Refers to the current horizontal flight speed of the aircraft. |
| 12 | Aircraft Battery | Displays the real-time remaining battery level of the aircraft in the dynamic circular battery bar. |

## 6.7 "Map" Interface

When the flight application is in split screen mode, tap the “ ” icon in the corner of the "Map" preview interface, or tap the "Map" mini window at the lower-left corner after entering the "Zoom Camera" interface, “Thermal Camera” interface, “Night Vision Camera” interface, or "Wide Angle Camera" interface, to enter the "Map" full-screen interface.


**Fig 6-7 "Map" Interface**

**Table 6-6 Interface Button Details**

| No. | Icon | Name | Description |
|---|---|---|---|
| 1 | | Search Map | When the remote controller is connected to the Internet, tap this icon and enter POI or latitude and longitude. According to what you enter, the “Map” interface will switch to the map of the corresponding position. |
| 2 | | Map Management | When the remote controller is connected to the Internet, tap this icon to select MapBox or Map Liber, adjust the map display style to a standard map or a hybrid map, show as well as to set “Display/Clear Flight Path” and import GEO-fence. You can also manage the offline map.<br>➢ Standard: 2D map.<br>➢ Hybrid: 2D map and satellite map combined. |
| 3 | | Orientation Lock | This icon indicates that the display direction of the map is locked.<br>When the remote controller is rotated, the display direction of the map will not change accordingly.<br>Tap this icon to unlock the display direction of the map of the current remote controller. |

| | | | |
|---|---|---|---|
| 4 |  | Orientation Unlock | This icon indicates that the display direction of the map is unlocked.<br>When the remote controller is rotated, the display direction of the map will change accordingly. Tap this icon to lock the display direction of the map of the current remote controller. |
| 5 |  | Overview | Tap this icon to simultaneously locate the positions of the remote controller, the home point, and the aircraft on the map. |
| 6 |  | Remote Controller Location | Tap this icon to locate the position of the remote controller on the map. |
| 7 |  | Home Point Location | Tap this icon to locate the position of the home point on the map. |
| 8 |  | Aircraft Position | Tap this icon to locate the position of the aircraft on the map. |
| 9 |  | Re-center | If the map is moved from the current positioning point to another location, this icon will appear on the right side of the screen.<br>Tap this icon, and the map will quickly return to the current positioning point. |
| 10 |  | Aircraft Search | When the aircraft is lost, you can tap this icon to query the location information of the lost aircraft. |

## 6.8 Camera Interfaces

### 6.8.1 Camera Function Access

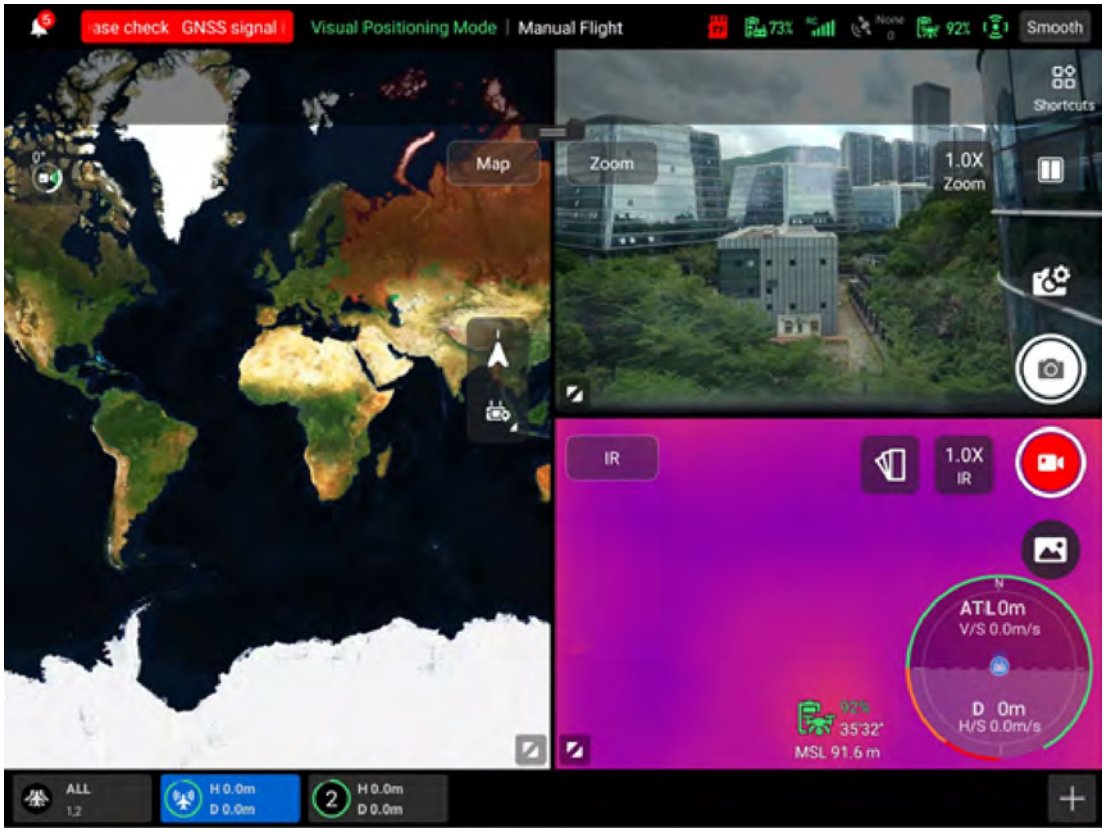



**Fig 6-8 Camera Function Access**

**Table 6-7 Camera Menu Details**

| No. | Icon | Meaning | Description |
|---|---|---|---|
| 1 | Zoom | Switch to Zoom Camera | On any camera full screen interface, tap this icon to enter the zoom camera interface. |
| 2 | IR | Switch to Thermal Camera | On any camera full screen interface, tap this icon to enter the thermal camera interface. |
| 3 | Wide | Switch to Wide Angle Camera | On any camera full screen interface, tap this icon to enter the wide angle camera interface. |
| 4 | NV | Switch to Night Vision Camera | On any camera full screen interface, tap this icon to enter the night vision camera interface. |
| 5 | | Camera Settings | Tap this icon to view and set parameters related to the gimbal camera. |
| 6 | | Photo | Tap this icon to take a photo. |

| | | | |
|---|---|---|---|
| 7 |  | Video | Tap this icon to start/end recording. |
| 8 |  | Album | Tap this icon to view photos and videos from the aircraft's album and the local album and download or delete them. |
| 9 |  | Zoom Camera Zoom | On the "Zoom Camera" interface, tap this dynamic icon to adjust the zoom factor of the zoom camera. |
| 10 |  | Thermal Camera Zoom | On the "Thermal Camera" interface, tap this dynamic icon to adjust the zoom factor of the infrared thermal imaging camera. |
| 11 |  | Wide Angle Camera Zoom | On the "Wide Angle Camera" interface, tap this dynamic icon to adjust the zoom factor of the wide angle camera. |
| 12 |  | Night Vision Camera Zoom | On the "Night Vision Camera" interface, tap this dynamic icon to adjust the zoom factor of the night vision camera. |
| 13 |  | Linked Zoom | Tap this icon to adjust the zoom factor of any camera, and other cameras will also adjust their zoom factors simultaneously, resulting in the synchronous enlargement or reduction of camera images.<br>Fusion 4T Gimbal:<br>➢ The zoom camera needs to be adjusted to 2.4x before the thermal camera starts to zoom synchronously.<br>Fusion 4T XE Gimbal:<br>➢ The zoom camera needs to be adjusted to 1.8x before the thermal camera starts to zoom synchronously.<br>Fusion 4N Gimbal:<br>➢ The wide angle camera needs to be adjusted to 2.2x before the thermal camera starts to zoom synchronously;<br>➢ The wide angle camera needs to be adjusted to 2.4x before the night vision camera starts to zoom synchronously;<br>➢ The wide angle camera can be adjusted to a maximum of 16x, the thermal camera can be zoomed synchronously up to 3.9x, and the night vision camera can be zoomed synchronously up to 3.6x. |

| | | | |
|---|---|---|---|
| 14 |  | Gimbal 0° | Tap this icon, and the gimbal returns to the horizontal centering state. |
| 15 |  | Gimbal 45° | Tap this icon, and the gimbal rotates obliquely downward, forming an angle of 45° with the horizontal direction. |
| 16 |  | Gimbal 90° | Tap this icon, and the gimbal rotates directly downward, forming an angle of 90° with the horizontal direction. |
| 17 |  | Thermal Color | Tap this icon, and the drop-down list of “Thermal Color” pops up. You can scroll up and down in the list to select a color palette. |
| 18 | -20-150 Mode | Radiometric Measurement Mode | High gain mode (-20°C to 150°C), which enables more accurate radiometric measurement. In “IR” camera interface, tap this icon to switch to low gain mode. |
| 19 | 0-550 Mode | Radiometric Measurement Mode | Low gain mode (0°C to 550°C), which has a larger radiometric measurement range. In “IR” camera interface, tap this icon to switch to high gain mode. |
| 20 | FFC | FFC Calibration | Flat-Field Calibration. In “IR” camera interface, tap this icon to perform calibration. After calibration, the image quality of thermal imaging will be optimized, and temperature changes will be easier to observe. |

## ■ Camera Settings

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

### 1. View Photo Properties

Tap the "  " icon to view the size and format of (zoom/wide angle) photos.

### 2. Set Video Properties

Tap the "  " icon to view the resolution, frame rate, and format of (zoom/wide angle) videos and set video encoding.

➢ Video encoding options are H.264 and H.265. The default option is H.264.

### 3. View Night Vision Shooting Properties

Tap the "NV" icon to view the size of night vision photos and videos and set the video encoding option.

➢ Video encoding options are H.264 and H.265. The default option is H.264.

### 4. Set Infrared Shooting

Tap the "IR" icon to view the size and format of infrared photos or videos and set the image mode and radiometric measurement function.

● Set Image Mode

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

- If the “Manual” mode is set, you can adjust the "Contrast" and "Brightness" by entering a value or tapping the numbers on the left and right sides.

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

1. Turn On/Off Image Enhancement

Tap the button to the right of "Image Enhancement" to turn on or off the image enhancement function.

- If this function is turned on, you can enter a value in the edit box below or drag the slider left or right to set the image enhancement value. The larger the value, the clearer the image details.

2. Set Isotherm

Four isotherm statuses are available, that is, “Off”, “Human”, “Fire”, and “Custom”.

- If “Custom” is selected, you can set the minimum and maximum temperature of the radiometric measurement range.

3. Set Emissivity

Enter a value in the edit box to the right of "Emissivity" or drag the slider below left or right to adjust the emissivity value.

4. Turn On/Off Temperature Alarm

Tap the button to the right of "Temperature Alarm" to turn on or off the temperature alarm function.

- You can set the minimum and maximum temperature for temperature alarms.

## 5. Advanced Settings

Tap the "⋯" icon to perform advanced settings for the camera:

- Select Camera

Tap "Select Camera" to select the lens used for shooting from the list of lenses of the gimbal camera. You can select one or more lenses.

- After a shooting lens is selected, when you tap the "📷" or "📹" icon, the selected lens will simultaneously take photos or record videos. For unselected lenses, the shooting function will be unavailable.

- Set Grid

  Three grid styles are available, which can assist with picture composition during shooting. You can select one or more grid styles.
  - When multiple grid styles are selected, the grid styles will be superimposed and displayed on all camera interfaces.

- Set Defog

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

- Three defog intensities are available, that is, “Weak”, “Medium”, and “Strong”. The stronger the defog intensity, the darker the image.

- Turn On/Off Stamps/Subtitles

Tap the button to the right of "Stamps/Subtitles" to turn on or off the stamps/subtitles function.

- If this function is turned on, you can set the time stamp, latitude & longitude and altitude, and aircraft SN functions. Once this function is enabled, the shot images will include the set stamp.

- Turn On/Off Arm Lights (When Shooting)

Tap the button to the right of "Turn off arm lights when shooting" to turn on or off this function.

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

- Turn On/Off Pre-recording

Tap the button to the right of "Pre-recording" to turn on or off this function.

- If this function is turned on, the aircraft will start recording 30 seconds ~ 1 minute in advance (tap the "■◖" icon).

- Turn On/Off Histogram

Tap the button to the right of "Histogram" to turn on or off the histogram function. The histogram can display the distribution of pixels in the images captured by the camera, thereby reflecting the exposure of the images.

- If the histogram function is turned on, a floating "Histogram" window will be generated on the screen of the remote controller, and you can drag the "Histogram" window to any area on the screen. Tap the "Close" button in the upper-right corner of the window to turn off the histogram function.

- Set Storage Location

You can choose "SD Card" or "Internal Storage" as the storage location. Also, you can view the storage status of "SD Card" and "Internal Storage" and tap "Format" on the right side to format the corresponding storage location.

- Reset Camera Parameters

Tap the "Reset" button to the right of “Camera Reset” to restore the camera parameters to default settings.

- View Camera Model

View the gimbal camera model.

| **Tip** |
| --- |
| • When the “Night Mode” function is turned on, the resolution of the video recorded with the “Wide-angle” camera will be reduced.<br>• The pre-recording function can prevent missing important shots when the aircraft is flying rapidly. The pre-recorded videos will be saved in the "PreRccorder" folder in the remote controller's root directory. |

## 6.8.2 Camera Switch and Operation

### ■ Camera Switch

- In the flight application, tap the "◪" icon in the corner of the "Zoom Camera" preview interface, or tap the "Zoom" icon after entering the "Thermal Camera" interface, to enter the "Zoom Camera" full-screen interface.
- In the flight application, tap the "◪" icon in the corner of the "Thermal Camera" preview interface, or tap the "IR " icon after entering the "Zoom Camera" interface or “Night Vision Camera” interface or “Wide Angle Camera” interface, to enter the "Thermal Camera" full-screen interface.

- In the flight application, tap the "" icon in the corner of the "Night Vision Camera" preview interface, or tap the "NV" icon after entering the "Wide Angle Camera" interface or “Thermal Camera” interface, to enter the "Night Vision Camera" full-screen interface.
- In the flight application, tap the "" icon in the corner of the "Wide Angle Camera" preview interface, or tap the "Wide" icon after entering the "Night Vision Camera" interface or “Thermal Camera” interface, to enter the "Wide Angle Camera" full-screen interface.

**Tip**

- Aircraft equipped with a Fusion 4T Gimbal or a Fusion 4T XE Gimbal can display the “zoom” camera interface and “Thermal” camera interface after connecting to the remote controller.
- Aircraft equipped with a Fusion 4N Gimbal can display the “wide-angle” camera interface, “Night Vision” camera interface and “Thermal” camera interface after connecting to the remote controller.

### ■ “Zoom” Camera Operations

#### 1. Adjust the Zoom Factor

When shooting, tap the "Zoom 1.0X" dynamic icon, and the zoom factor setting window will pop up. A maximum of 160x hybrid zoom is supported. You can drag up and down or tap the number on the left to set the zoom factor according to your needs to zoom in and out on the shooting picture, so as to flexibly shoot objects at different distances.

#### 2. Camera Settings

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

### ■ “Thermal Camera” Operations

#### 1. Set Thermal Color

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

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

#### 2. Set Infrared Shooting

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

#### 3. Set Radiometric Measurement Mode

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

➢ High gain mode (-20°C to 150°C): This mode has higher radiometric measurement accuracy but a smaller radiometric measurement range compared with the low gain mode.

➢ Low gain mode (0°C to 550°C): This mode has a larger radiometric measurement range but lower radiometric measurement accuracy compared with the high gain mode.

#### 4. FFC Calibration

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

### 5. Adjust the Infrared Zoom Factor

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

**Tip**

- The radiometric measurement mode and FFC calibration functions can be used only after the infrared radiometric measurement function is enabled in the camera settings.
- The thermal cameras of Fusion 4T gimbal, Fusion 4T XE Gimbal and Fusion 4N gimbal support up to 16x digital zoom.

**Warning**

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

#### ■ "Night Vision Camera" Operations

#### 1. Adjust the Night Vision Zoom Factor

While shooting, tap the "NV 1.0X" dynamic icon, and the night vision zoom factor setting window will pop up. A maximum of 8x digital zoom is supported. You can drag up or down to zoom in or out on the picture captured by the night vision camera, so as to flexibly shoot objects at different distances.

#### 2. Camera Settings

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

#### ■ "Wide Angle Camera" Operations

#### 1. Adjust the Wide Angle Zoom Factor

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

#### 2. Camera Settings

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

## 6.9 Flight Missions

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

**Important**

If any of the following conditions are detected, the aircraft will end the mission automatically, and the aircraft will perform other operations according to the following conditions:

- Aircraft low battery power: A notification will pop up on the flight application to inform you that the aircraft will return to the home point automatically.
- Aircraft 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 powered off, the aircraft will execute the lost action that you set.

**Tip**

- When the aircraft is in visual positioning mode or attitude mode, it cannot execute mission flight (waypoint missions or polygon missions).

### 6.9.1 Waypoint Mission

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

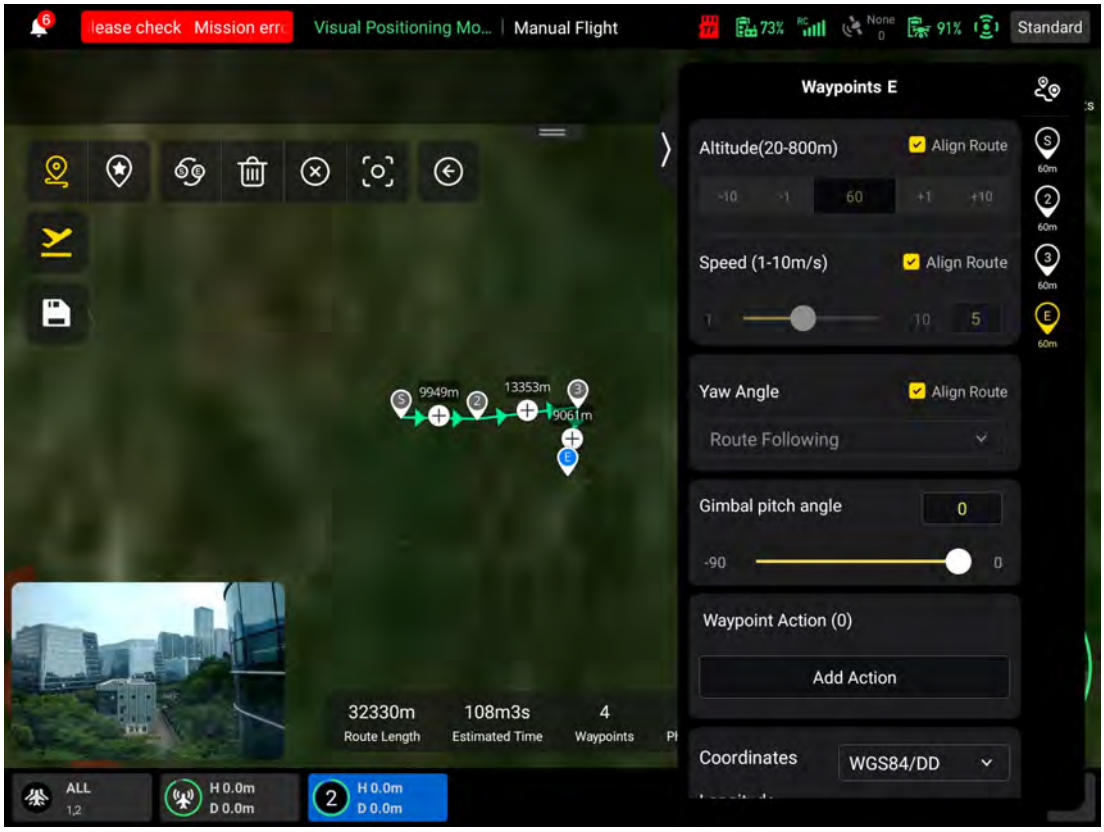



**Fig 6-9 Waypoint (before taking off)**

**Table 6-8 "Waypoint Mission" Terms and Details**

| Term | Definition |
|---|---|
| ATL | 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 turn to the point of interest. |
| Gimbal pitch | The observable range of the gimbal camera, that is, the angle from the top to the bottom. |
| Finish Action | Refers to the actions that the aircraft will perform after finishing the waypoint mission. |
| Lost Action | Refers to the actions that the aircraft will perform when the flight application displays a warning saying "Aircraft disconnected." during flight. |
| Waypoint Action | Refers to the actions performed by the camera, the gimbal, and the aircraft at a specific waypoint. |
| Coordinated Turns | After it is set, the aircraft will switch from the current segment to the |