- 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, it cannot execute waypoint missions, rectangle missions, or polygon missions.

6.9.1 Waypoint

In the shortcut toolbar (or Shortcuts), click the "" icon to enter the "Waypoint" mission interface.

You can add multiple waypoints on the map. Every two neighboring waypoints connect to form a flight segment and one or more flight segments form a route. By setting the flight altitude, flight speed, camera action, and waypoint actions of each waypoint for each route and each waypoint, the aircraft will automatically fly according to the route and perform corresponding actions at each waypoint.

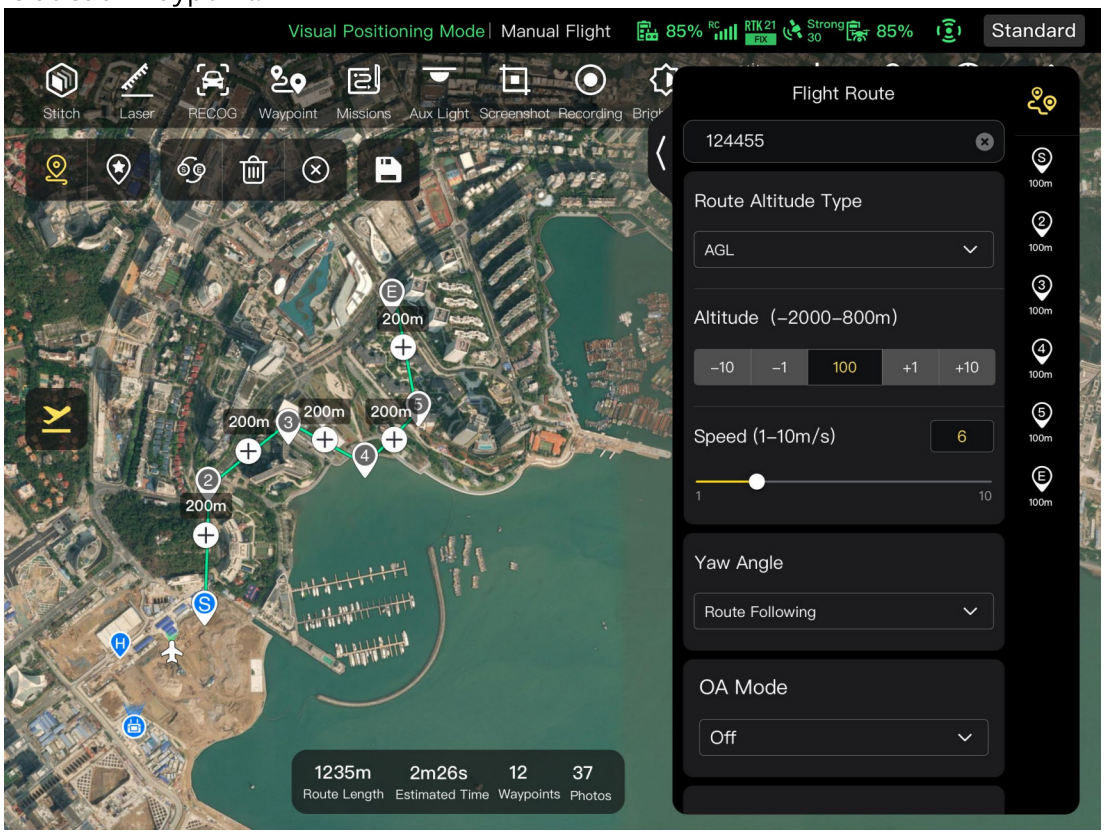

Fig 6-18 Waypoint

Fig 6-19 Waypoint Mission in Progress

Table 6-10 "Waypoint Mission" Terms and Details

Term	Definition
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 turn to the point of interest.
Gimbal pitch	The observable range of the gimbal camera, that is, the angle from the top to the bottom (0° ~ 90°).
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 disconnected from the remote controller for more than 4 seconds during flight.
Segment Action	Refers to the actions performed by the camera, the gimbal, and the aircraft during the flight segment formed between the current waypoint and the next waypoint.

Waypoint Action	Refers to the actions performed by the camera, gimbal, and aircraft at a specific waypoint.

Table 6-11 "Waypoint Mission" Icons and Details

No.	Icon	Meaning	Description
1		Waypoint Settings	Click this icon to add a waypoint on the map as needed. Every two neighboring waypoints connect to form a flight segment and one or more flight segments form a route.
2		POI Settings	Click this icon to add a point of interest on the map as needed.
3		Heading Switch	Click this icon, and the starting point and ending point of the whole route will change direction.
4		Delete	When the aircraft is in waypoint setting status, clicking this icon once will delete the latest waypoint but cannot delete points of interest. When the aircraft is in POI setting status, clicking this icon once will delete the latest point of interest but cannot delete waypoints.
5		Clear	Click this icon and then click the "Confirm" button to clear all waypoints and POIs.
6		Save Route	Click this icon, and the currently edited waypoint mission will be saved to “Mission”.
7		Edit Route	Click this icon to edit the saved route missions.
8		Execute Mission	Click this button, and the aircraft will enter the "Pre-flight Check" interface. After the check is completed, the aircraft will take off to perform the waypoint mission.
9		Pause Mission	When executing a waypoint mission, click this icon, and the aircraft will pause the waypoint mission and hover at the current position.
10		Exit Mission	Click this icon, and the aircraft will abort the current waypoint mission and automatically return.

■ Add Waypoints

On the waypoint mission interface, click the "" icon, find the starting point for the mission on the map and click it to create the first waypoint, and then repeat the previous operation to create multiple waypoints as required.
When adding waypoints, the waypoint mission settings interface will pop up on the right side of the waypoint mission interface.

Tip

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

Click the "" icon in the upper-right corner of the waypoint settings interface to enter the route settings interface.
Click the waypoint icon on the right side of the waypoint settings interface to enter the corresponding waypoint settings interface.

■ Set Route Name and Route Altitude Type

On the route settings interface:

- Click the "Route Name" edit box and enter the name as required to set the name of a route.
- Click the drop-down list of "Route Altitude Type" and select "AGL" or "MSL" to set the altitude type of the entire route.

■ Set Flight Altitude

In the "Flight Altitude" edit box on the route settings interface, directly enter the flight altitude value or click the shortcut buttons on the left and right sides to adjust the integer value. This way, you set the flight altitude of the entire route.
On the waypoint settings interface, the flight altitude is set to "Align Route" by default. After deselecting "Align Route", in the "Flight Altitude" edit box, directly enter the flight altitude value or click the shortcut buttons on the left and right sides to adjust the value. This way, you set the flight altitude of the aircraft at the current waypoint.

Tip

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

■ Set Flight Speed

In the "Flight Speed" edit box on the route settings interface, directly enter the flight speed value or move the slider below left or right to adjust the value. This way, you set the flight speed of the entire route.
On the waypoint settings interface, the flight speed is set to "Align Route" by default. After deselecting "Align Route", in the "Flight Speed" edit box, directly enter the flight speed value or move the slider below left or right to adjust the value. This way, you set the flight speed of the aircraft at the current waypoint.

Tip

- The flight speed setting ranges from 1 to 10 m/s.

Note

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

■ Set Yaw Angle

On the route settings interface, click the drop-down list of "Yaw Angle" to set the yaw angle of the aircraft in the entire route to “Route Following”, “Manual”, or “Custom”.

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

- Route Following: If it is set to “Route Following”, 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 it is set to “Manual”, you need to use the remote controller to control the nose 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.
- Turn to Point of Interest: If it is set to “Turn to Point of Interest”, the nose of the aircraft will always face the set POI during the flight segment where the yaw angle of the aircraft is set to "Turn to Point of Interest" when the waypoint mission is executed.

■ Set Obstacle Avoidance Mode

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

- If "Hovering" is selected, the aircraft will hover when detect obstacles.

Warning

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

■ Set Camera Action

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

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

- When it is set to "Timelapse", the “Photo Interval” will be displayed. At this time, you can move the slider left or right to adjust the value.

- When it is set to "Distance Lapse", the “Photo Distance” will be displayed. At this time, you can move the slider left or right to adjust the value.

■ Set Gimbal Pitch Angle

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

■ Add a Waypoint Action

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

■ Set Finish Action

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

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

■ Set Signal Loss Action

On the route settings interface, click the drop-down list of "Signal Loss Action" to set the flight action of the aircraft after losing connection with the remote controller for 4 seconds.

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

■ Set Waypoint Coordinates

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

- Under “Waypoint Coordinates” on the waypoint settings interface, the waypoint coordinates can be set in two formats: DD (Decimal Degrees) and DMS (Degrees Minutes Seconds). Click the "Longitude" and "Latitude" edit boxes below and enter the longitude and latitude of the waypoint to complete the modification of the waypoint coordinates.
- When using the DD (Decimal Degrees) format, you can use the arrow keys located on the right side of the editing field to make fine adjustments to the longitude and latitude.

Table 6-12 Fine Adjustment of Latitude and Longitude

Parameter Type	Click Up Arrow	Click Down Arrow	Click Left Arrow	Click Right Arrow
Longitude	/	/	-0.000005	+0.000005
Latitude	+0.000005	-0.000005	/	/

■ Add Point of Interest

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

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

■ Set POI Altitude

On the POI settings interface, you can set the POI altitude. POI altitude refers to the altitude of the point of interest relative to the take-off point. In the "Altitude (0-800m)" edit box, directly enter the altitude value of the point of interest or click the shortcut buttons on the left and right sides to adjust the value to set the POI altitude.

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

On the POI settings interface, click the waypoints to be associated under "Link Waypoint(s)" to associate the current point of interest with the selected waypoints. To associate all waypoints, check the "Select All" box on the right side.

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

■ Start Pre-flight Check

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

■ Upload a Route and Start a Mission

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

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

6.9.2 Rectangle Mission

In the shortcut toolbar (or Shortcuts), click the "" icon to enter the "Rectangle" mission interface.

You can add a rectangular area on the map and perform operations such as dragging, scaling, and rotating to adjust the position and size of the area. After adjustments, the Autel Enterprise App will automatically generate a continuous series of equidistant flight routes within the rectangular area based on the side overlap and course angle settings. The aircraft will then

automatically fly to execute the shooting mission according to these flight routes and relevant settings.

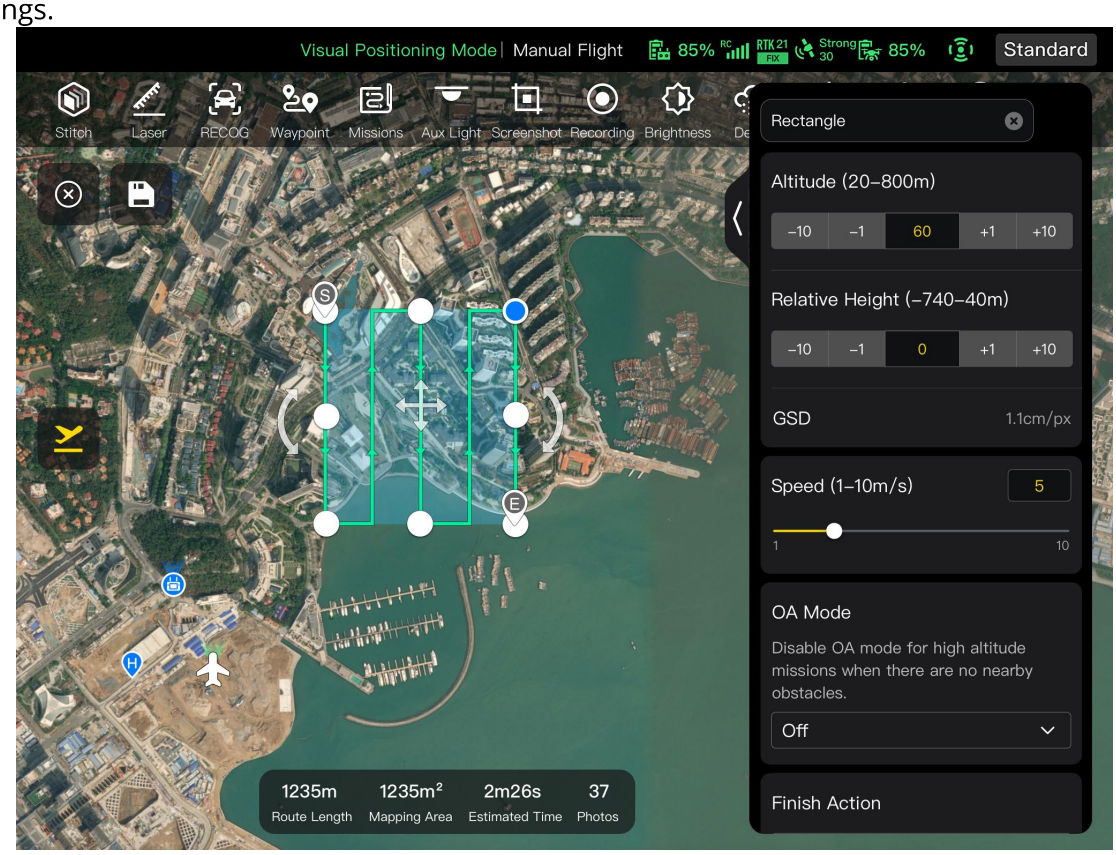

Fig 6-20 Rectangle Mission

Fig 6-21 Rectangle Mission in Progress

Table 6-13 "Rectangle Mission" Terms and Details

Term	Definition
Relative Height	Refers to the vertical altitude of the work surface of the shot object relative to the take-off point of the aircraft.
GSD	Ground Sampling Distance.
Finish Action	Refers to the action that the aircraft will perform after completing a rectangle mission.
Lost Action	Refers to the actions that the aircraft will perform when disconnected from the remote controller for more than 4 seconds during flight.
Front Overlap	Refers to the image overlap rate between two consecutive photos taken when capturing images along the flight heading.
Side Overlap	Refers to the image overlap rate between two consecutive photos taken when capturing images along two adjacent flight routes.
Main Course Angle	Refers to the course angle between the main route and the latitude line (horizontal line) when the flight routes are automatically generated.
Gimbal pitch	The observable range of the gimbal camera, that is, the angle from the top to the bottom (-30° ~ 90°).
Coordinated Turns	When enabled, the aircraft will switch from one main route to an adjacent main route along the optimal arc-shaped path.

Table 6-14 "Rectangle Mission" Icons and Details

No.	Icon	Meaning	Description
1		Clear	Click this button, and then click the "Confirm" button in the pop-up window to reset the rectangle mission.
2		Save Route	Click this icon, and the currently edited rectangle mission will be saved to “Mission”.
3		Edit Route	Click this icon to edit the saved rectangle mission.
4		Execute Mission	Click this button, and the aircraft will enter the "Pre-flight Check" interface. After the check is completed, the aircraft will take off to perform the rectangle mission.
5		Pause Mission	When executing a rectangle mission, click this icon, and the aircraft will pause the rectangle mission and hover at the current position.