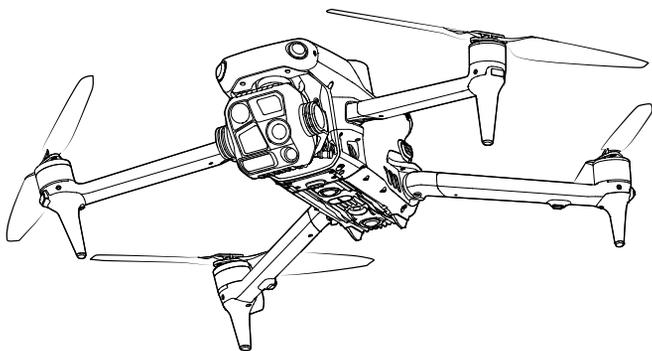


# **dji** MATRICE 4 SERIES

## User Manual

v1.2 2025.04





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In the event of divergence among different versions, the English version shall prevail.

### **Searching for Keywords**

Search for keywords such as “battery” and “install” to find a topic. If you are using Adobe Acrobat Reader to read this document, press Ctrl+F on Windows or Command+F on Mac to begin a search.

### **Navigating to a Topic**

View a complete list of topics in the table of contents. Click on a topic to navigate to that section.

### **Printing this Document**

This document supports high resolution printing.

## Using this Manual

- ⚠ • The operating temperature of this product is -10° to 40° C. It does not meet the standard operating temperature for military-grade application (-55° to 125° C), which is required to endure greater environmental variability. Operate the product appropriately and only for applications that meet the operating temperature range requirements of that grade.

## Legend

⚠ Important

💡 Hints and Tips

📖 Reference

## Read Before Use

DJI™ provides you with tutorial videos and the following documents:

1. *Safety Guidelines*
2. *Quick Start Guide*
3. *User Manual*

It is recommended to watch all the tutorial videos and read the *Safety Guidelines* before using for the first time. Make sure to review the *Quick Start Guide* before using for the first time and refer to this *User Manual* for more information.

## Video Tutorials

Go to the address below or scan the QR code to watch the tutorial videos, which demonstrate how to use the product safely:



<https://enterprise.dji.com/matrice-4-series/video>

## Download DJI Assistant 2

Download and install DJI ASSISTANT™ 2 (Enterprise Series) using the link below:

<https://www.dji.com/downloads/softwares/assistant-dji-2-for-matrice>

# Contents

<b>Using this Manual</b>	<b>3</b>
Legend	3
Read Before Use	3
Video Tutorials	3
Download DJI Assistant 2	4
<b>1 Overview</b>	<b>9</b>
1.1 Aircraft	9
1.2 Remote Controller	10
<b>2 Flight Safety</b>	<b>12</b>
2.1 Operating the Aircraft Responsibly	12
2.2 Flight Restrictions	12
GEO (Geospatial Environment Online) System	12
GEO Zones	13
Flight Restrictions	13
Buffer Zone	15
Unlocking GEO Zones	16
Flight Altitude and Distance Limits	16
2.3 Flight Environment Requirements	17
<b>3 Using for the First Time</b>	<b>19</b>
3.1 Charging the Battery	19
3.2 Preparing the Remote Controller	19
Adjusting the Antennas	19
3.3 Preparing the Aircraft	20
3.4 Activation	20
3.5 Basic Flight	21
Pre-Flight Checklist	21
Starting/Stopping the Motors	22
Starting the Motors	22
Stopping the Motors	22
Stopping the Motors Mid-Flight	23
Controlling the Aircraft	23
<b>4 Aircraft</b>	<b>25</b>
4.1 Flight Modes	25
4.2 Aircraft Status Indicator	26
4.3 Beacon	27
4.4 Propellers	28

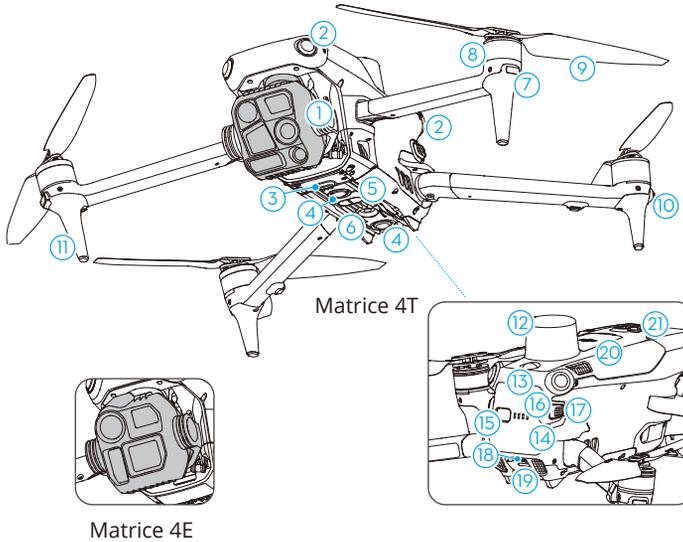
	Notice	28
4.5	Camera	29
	Storing and Exporting Photos and Videos	30
4.6	Gimbal	30
	Gimbal Angle	30
	Gimbal Notice	30
4.7	Intelligent Flight Battery	31
	Notice	31
	Inserting/Removing the Battery	32
	Checking the Battery Level	33
	Charging the Battery	33
	Using the Charging Hub	33
	Battery Level LEDs	35
	Battery Protection Mechanisms	35
4.8	Aircraft RTK	35
	Enabling/Disabling RTK	36
	Custom Network RTK	36
4.9	Return to Home	36
	Notice	37
	Advanced RTH	39
	Trigger Method	39
	RTH Procedure	40
	RTH Settings	42
	Landing Protection	44
4.10	Sensing System	45
	Notice	46
	Vision Assist	47
4.11	Advanced Pilot Assistance Systems	48
	Notice	49
	Landing Protection	49
4.12	DJI AirSense	49
4.13	Expansion Port	51
<b>5</b>	<b>Remote Controller</b>	<b>52</b>
5.1	Charging the Battery	52
5.2	Customizable Button	52
5.3	Button Combinations	53
5.4	Operating the Touchscreen	53
5.5	Remote Controller LEDs	54
	Status LED	54
	Battery Level LEDs	55
5.6	Remote Controller Alert	55

5.7	Optimal Transmission Zone	56
5.8	Linking the Remote Controller	56
5.9	HDMI Settings	57
<b>6</b>	<b>DJI Pilot 2 App</b>	<b>58</b>
6.1	Homepage	58
6.2	Camera View	59
	Top Bar	59
	Navigation Display	60
	Zoom Camera View	62
	Wide-Angle Camera View	64
	Thermal Camera View	64
	Laser Rangefinding	66
	Primary Flight Display	66
<b>7</b>	<b>Flight Operations</b>	<b>69</b>
7.1	Annotation Management and Synchronization	69
	PinPoint	69
	Line and Area Annotation Management	70
	Annotation Sharing	71
7.2	Intelligent functions	71
	POI	71
7.3	Flight Tasks	72
	Waypoint Route	73
	Set Waypoints	74
	Live Mission Recording	75
	Area Route	76
	Smart Oblique	77
	Terrain follow	77
	Linear Route	79
	Set Waypoints	80
	Live Mission Recording	80
	Slope Route	80
	Create Slope	80
	Adjust and Confirm AR Slope	81
	Adjust Flight Route Parameters	82
	Geometric Route	82
	Set the Bottom Base Shape	82
	Set Altitude	83
	Adjust Flight Route Parameters	84
	Smart 3D Capture	84
	Collecting Aerial Photogrammetry Data	85

Route Parameters	86
Data Storage	90
Photo File	90
Image Log File	93
GNSS Observation File	93
<b>8 Appendix</b>	<b>94</b>
8.1 Specifications	94
8.2 Firmware Update	94
Using DJI Pilot 2	94
Aircraft and Remote Controller Firmware Update	94
Offline Firmware Update	94
Using DJI Assistant 2 (Enterprise Series)	94
Aircraft and Remote Controller Firmware Update	94
Notices	95
8.3 Flight Data	95
8.4 Using Enhanced Transmission	96
Inserting the nano-SIM Card	96
Installing the DJI Cellular Dongle 2	97
Using Enhanced Transmission	98
Security Strategy	98
Remote Controller Usage Notes	98
4G Network Requirements	99
8.5 Post-Flight Checklist	99
8.6 Maintenance Instructions	100
8.7 Troubleshooting Procedures	101
8.8 Risks and Warnings	101
8.9 Disposal	102
8.10 C2 Certification	102
Remote Controller Warnings	104
Direct Remote ID	104
GEO Awareness	104
<b>GEO Zones</b>	105
EASA Notice	107
Original Instructions	108
8.11 FAR Remote ID Compliance Information	108

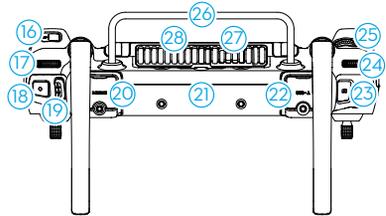
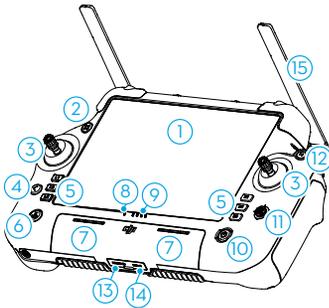
# 1 Overview

## 1.1 Aircraft



- |  |  |
|--|--|
| 1. Gimbal and Camera                         | 11. Landing Gears (built-in antennas)  |
| 2. Omnidirectional Vision System             | 12. GNSS Antenna                       |
| 3. Expansion Port                            | 13. Beacon                             |
| 4. Downward Vision System                    | 14. Intelligent Flight Battery         |
| 5. Three-Dimensional Infrared Sensing System | 15. Power Button                       |
| 6. Auxiliary Light                           | 16. Battery Level LEDs                 |
| 7. Front LEDs                                | 17. Battery Buckles                    |
| 8. Motors                                    | 18. USB-C Assistant Port (E-Port Lite) |
| 9. Propellers                                | 19. microSD Card Slot                  |
| 10. Aircraft Status Indicators               | 20. Cellular Dongle Compartment        |
|  | 21. E-Port                             |

## 1.2 Remote Controller



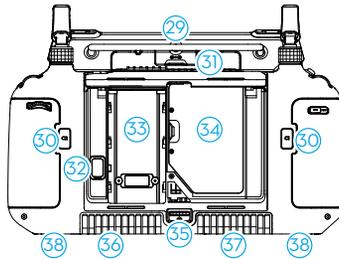
1. Touchscreen
2. Connection Status LED
3. Joystick
4. Back/Function Button  
Press once to return to the previous screen. Press twice to return to the home screen.  
Use the back button and another button to activate combination buttons. Refer to the [Button Combinations](#) section for more information.
5. L1/L2/L3/R1/R2/R3 Buttons  
Go to camera view in DJI Pilot 2 to view the specific functions of these buttons.
6. Return to Home (RTH) Button  
Press and hold to initiate RTH. Press again to cancel RTH.
7. Microphone
8. Status Indicator
9. Battery Level LEDs
10. Power Button  
Press once to check the current battery level. Press once, then press

- again and hold to power the remote controller on or off. While the remote controller is powered on, press once to turn the touchscreen on or off.
11. 5D Button
12. Flight Pause Button  
Press once to make the aircraft brake and hover in place (only when GNSS or Vision Systems are available).
13. microSD Card Slot
14. USB-C Port
15. External Antennas
16. Customizable C3 Button
17. Gimbal Dial
18. Record Button
19. Flight Mode Switch
20. HDMI Port
21. Internal Antennas
22. USB-A Port  
Users can insert third-party devices, such as a USB flash drive or a memory card.
23. Focus/Shutter Button

Press the button halfway down for autofocus and all the way down to take a photo.

- 24. Camera Zoom Dial
- 25. Customizable C4 Scroll Wheel
- 26. Handle
- 27. Speaker
- 28. Air Vent
- 29. Reserved Mounting Holes
- 30. Customizable C1/C2 Buttons

- 31. Rear Cover
- 32. Battery Release Button
- 33. Battery Compartment
- For installing the WB37 intelligent battery.
- 34. Cellular Dongle Compartment
- 35. Rear Cover Release Button
- 36. Alarm
- 37. Air Intake
- 38. M4 Screw Holes



## 2 Flight Safety

After completing pre-flight preparations, it is recommended to train your flying skills and practice flying safely. Pick a suitable area to fly in according to the following flight requirements and restrictions. Strictly abide by local laws and regulations when flying. Read the *Safety Guidelines* before flight to ensure safe use of the product.

### 2.1 Operating the Aircraft Responsibly

To avoid serious injury and property damage, observe the following rules:

1. Make sure you are NOT under the influence of anesthesia, alcohol, or drugs or suffering from dizziness, fatigue, nausea, or other conditions that could impair the ability to operate the aircraft safely.
2. After landing, power off the aircraft first, then switch off the remote controller.
3. DO NOT drop, launch, fire, or otherwise project any dangerous payloads on or at any buildings, persons, or animals, which could cause personal injury or property damage.
4. DO NOT use an aircraft that has been accidentally damaged, crashed, or is not in good condition.
5. Make sure to train sufficiently and have contingency plans for emergencies or if an incident occurs.
6. Make sure to have a flight plan. DO NOT fly the aircraft recklessly.
7. Respect the privacy of others when using the camera. Make sure to comply with local privacy laws, regulations, and moral standards.
8. DO NOT use this product for any reason other than general personal use.
9. DO NOT use it for illegal or inappropriate purposes such as spying, military operations, or unauthorized investigations.
10. DO NOT use this product to defame, abuse, harass, stalk, threaten, or otherwise violate legal rights such as the right to privacy and publicity of others.
11. DO NOT trespass onto the private property of others.

### 2.2 Flight Restrictions

#### GEO (Geospatial Environment Online) System

The DJI Geospatial Environment Online (GEO) System is a global information system that provides real-time information on flight safety and restriction updates and prevents

UAVs from flying in restricted airspace. Under exceptional circumstances, restricted areas can be unlocked to allow flights. Prior to that, you must submit an unlocking request based on the current restriction level in the intended flight area. The GEO system may not fully align with local laws and regulations. You are responsible for your own flight safety and must consult with the local authorities on the relevant legal and regulatory requirements before requesting to unlock a restricted area. For more information about the GEO system, visit <https://fly-safe.dji.com>.

## GEO Zones

The DJI GEO system designates safe flight locations, provides risk levels and safety notices for individual flights, and offers information on restricted airspace. All restricted flight areas are referred to as GEO Zones, which are further divided into Restricted Zones, Authorization Zones, Warning Zones, Enhanced Warning Zones, and Altitude Zones. You can view such information in real-time in DJI Pilot 2. GEO Zones are specific flight areas, including but not limited to airports, large event venues, locations where public emergencies have occurred (such as forest fires), nuclear power plants, prisons, government properties, and military facilities. By default, the GEO system limits takeoffs and flights in zones that may cause safety or security concerns. A GEO Zone map that contains comprehensive information on GEO Zones around the globe is available on the official DJI website: <https://fly-safe.dji.com/nfz/nfz-query>.

## Flight Restrictions

The following section describes in detail the flight restrictions for the above mentioned GEO Zones.

### Restricted Zones (Red)

UAVs are prohibited from flying in Restricted Zones. If you have obtained permission to fly in a Restricted Zone, visit <https://fly-safe.dji.com> or contact [flysafe@dji.com](mailto:flysafe@dji.com) to unlock the zone.

### Scenario

**Takeoff:** the aircraft motors cannot be started in Restricted Zones.

**In Flight:** when the aircraft flies inside a Restricted Zone, a 100-second countdown will commence in DJI Pilot 2. When the countdown is finished, the aircraft will land immediately in semi-automatic descent mode and turn off its motors after landing.

**In Flight:** when the aircraft approaches the boundary of a Restricted Zone, the aircraft will automatically decelerate and hover.

### Authorization Zones (Blue)

The aircraft will not be able to take off in an Authorization Zone unless it obtains a permission to fly in the area.

#### Scenario

**Takeoff:** the aircraft motors cannot be started in Authorization Zones. To fly in an Authorization Zone, the user is required to submit an unlocking request registered with a DJI-verified phone number.

**In Flight:** when the aircraft flies inside an Authorization Zone, a 100-second countdown will commence in DJI Pilot 2. When the countdown is finished, the aircraft will land immediately in semi-automatic descent mode and turn off its motors after landing.

### Warning Zones (Yellow)

A warning will be displayed when the aircraft flies inside a Warning Zone.

#### Scenario

The aircraft can fly in the zone but the user is required to understand the warning.

### Enhanced Warning Zones (Orange)

When the aircraft flies in an Enhanced Warning Zone, a warning will be displayed prompting the user to confirm the flight path.

#### Scenario

The aircraft can continue to fly once the warning is confirmed.

### Altitude Zones (Gray)

The aircraft altitude is limited when flying inside an Altitude Zone.

#### Scenario

When the GNSS signal is strong, the aircraft cannot fly above the altitude limit.

**In Flight:** when the GNSS signal changes from weak to strong, a 100-second countdown will commence in DJI Pilot 2 if the aircraft exceeds the altitude limit. When the countdown is finished, the aircraft will descend below the altitude limit and hover.

When the aircraft approaches the boundary of an Altitude Zone and the GNSS signal is strong, the aircraft will decelerate automatically and hover if the aircraft is above the altitude limit.



- **Semi-Automatic Descent:** all stick commands except the throttle stick command and the RTH button are available during descent and landing. The aircraft motors will turn off automatically after landing. It is recommended to fly the aircraft to a safe location before the semi-automatic descent.
-

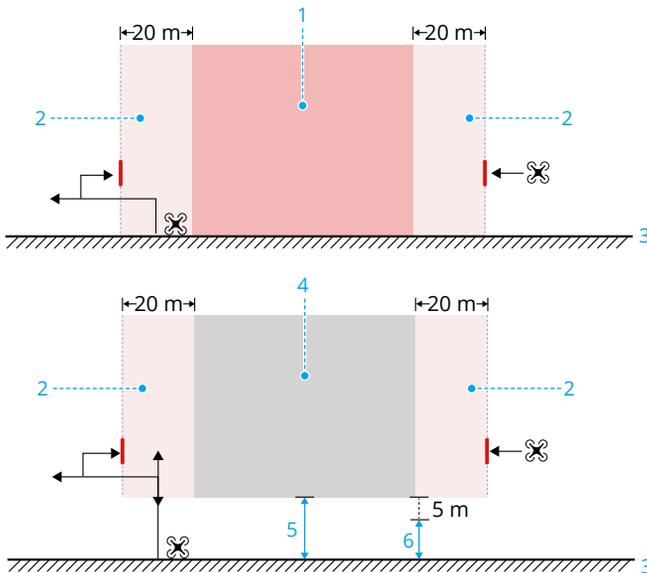
## Buffer Zone

### Buffer Zones for Restricted Zones/Authorization Zones

To prevent the aircraft from accidentally flying into a Restricted or Authorization Zone, the GEO system creates a buffer zone of about 20 meters wide outside each Restricted and Authorization Zone. As shown in the illustration below, the aircraft can only take off and land in place or fly toward an opposite direction of the Restricted or Authorization Zone when inside the buffer zone, and cannot fly toward the Restricted or Authorization Zone unless an unlocking request has been approved. The aircraft cannot fly back into the buffer zone after leaving the buffer zone.

### Buffer Zones for Altitude Zones

A buffer zone of about 20 meters wide is established outside each Altitude Zone. As shown in the illustration below, when approaching the buffer zone of an Altitude Zone in a horizontal direction, the aircraft will gradually reduce its flight speed and hover outside the buffer zone. When approaching the buffer zone from underneath in a vertical direction, the aircraft can ascend and descend in altitude or fly in an opposite direction of the Altitude Zone, but cannot fly toward the Altitude Zone. The aircraft cannot fly back into the buffer zone in a horizontal direction after leaving the buffer zone.



- |                                    |                    |
|------------------------------------|--------------------|
| 1. Restricted Zone/Authorized Zone | 4. Altitude Zone   |
| 2. Buffer Zone                     | 5. Altitude Limit  |
| 3. Ground                          | 6. Flight Altitude |

## Unlocking GEO Zones

**Self-Unlocking** is intended for unlocking Authorization Zones. To complete Self-Unlocking, you must submit an unlocking request via the DJI FlySafe website at <https://fly-safe.dji.com>. Once the unlocking request is approved, you can synchronize the unlocking license through the DJI Pilot 2 app. To unlock the zone, alternatively, you can launch or fly the aircraft directly into the approved Authorization Zone and follow the prompts in DJI Pilot 2 to unlock the zone.

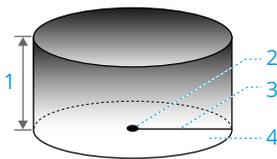
**Custom Unlocking** is tailored for users with special requirements. It designates user-defined custom flight areas and provides flight permission documents specific to the needs of different users. This unlocking option is available in all countries and regions and can be requested via the DJI FlySafe website at <https://fly-safe.dji.com>.

**Unlocking on Mobile Device:** Run the DJI Pilot 2 app and tap GEO Zone Map on the home screen. View the list of the unlocking licenses and tap ⓘ to view details of the unlocking license. A link to the unlocking license and a QR code will be displayed. Use your mobile device to scan the QR code and apply to unlock directly from the mobile device.

- 
- ⚠ • To ensure flight safety, the aircraft will not be able to fly out of the unlocked zone after entering it. If the Home Point is outside the unlocked zone, the aircraft will not be able to return home.
- 

## Flight Altitude and Distance Limits

Max altitude restricts the flight altitude of the aircraft, while max distance restricts the flight radius around the Home Point of the aircraft. These limits can be changed in the DJI Pilot 2 app for improved flight safety.



1. Max Altitude
2. Home Point (Horizontal Position)
3. Max Distance
4. Height of aircraft when taking off

### Strong GNSS Signal

	Flight Restrictions	Prompt in DJI Pilot 2 App
Max Altitude	Altitude of the aircraft cannot exceed the value set in DJI Pilot 2.	Max flight altitude reached.

	Flight Restrictions	Prompt in DJI Pilot 2 App
Max Distance	The straight-line distance from the aircraft to the Home Point cannot exceed the max flight distance set in DJI Pilot 2.	Max flight distance reached.

*Weak GNSS Signal*

	Flight Restrictions	Prompt in DJI Pilot 2 App
Max Altitude	<ul style="list-style-type: none"> <li>Altitude is restricted to 60 m from the takeoff point if lighting is sufficient.</li> <li>Altitude is restricted to 3 m above the ground if lighting is not sufficient and the 3D infrared sensing system is functioning.</li> <li>Altitude is restricted to 60 m from the takeoff point if lighting is not sufficient and the 3D infrared sensing system is not functioning.</li> </ul>	Max flight altitude reached.
Max Distance	No limit	



- Each time the aircraft is powered on, the altitude limit will be automatically removed as long as the GNSS signal becomes strong (GNSS signal strength  $\geq 2$ ), and the limit will not take effect even if the GNSS signal becomes weak afterwards.
- If the aircraft flies out of the set flight range due to inertia, you can still control the aircraft but cannot fly it any further away.

## 2.3 Flight Environment Requirements

- DO NOT fly in severe weather conditions such as strong winds, snow, rain, and fog.
- Only fly in open areas. Tall buildings and large metal structures may affect the accuracy of the onboard compass and GNSS system. After takeoff, make sure you are notified with the voice prompt that the Home Point is updated before continuing flight. If the aircraft has taken off near buildings, the accuracy of the Home Point cannot be guaranteed. In this case, pay close attention to the current position of

the aircraft during auto RTH. When the aircraft is close to the Home Point, it is recommended to cancel auto RTH and manually control the aircraft to land at an appropriate location.

3. Fly the aircraft within visual line of sight (VLOS). Avoid mountains and trees blocking GNSS signals. Any flight beyond visual line of sight (BVLOS) can be conducted only when the aircraft performance, the knowledge and skills of the pilot, and the operational safety management are compliant with local regulations for BVLOS. Avoid obstacles, crowds, trees, and bodies of water. For safety reasons, DO NOT fly the aircraft near airports, highways, railway stations, railway lines, city centers, or other sensitive areas, unless any permit or approval is obtained under local regulations.
4. Make sure the beacon and the auxiliary bottom light are enabled at night for flight safety.
5. The performance of the aircraft and its battery is limited when flying at high altitudes. Fly with caution. DO NOT fly above the specified altitude.
6. The braking distance of the aircraft is affected by the flight altitude. The higher the altitude, the greater the braking distance. When flying at high altitudes, you should reserve adequate braking distance to ensure flight safety.
7. GNSS cannot be used on the aircraft in polar regions. Use the vision system instead.
8. DO NOT take off from moving objects such as cars, ships, and airplanes.
9. DO NOT take off from solid-colored surfaces or surfaces with strong reflections such as a car roof.
10. Be careful when taking off in the desert or from a beach to avoid sand entering the aircraft.
11. DO NOT operate the aircraft near bird flocks.

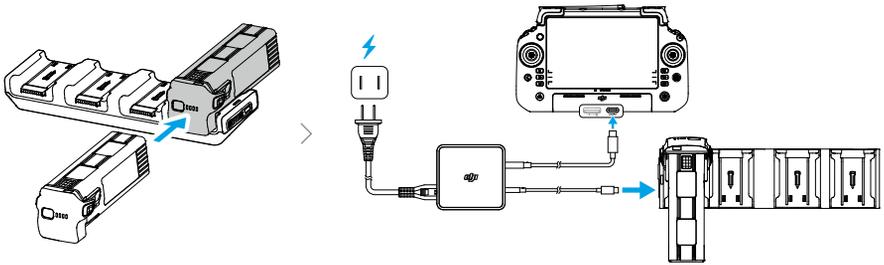
## 3 Using for the First Time

Click the link or scan the QR code to watch the tutorial videos.



<https://enterprise.dji.com/matrice-4-series/video>

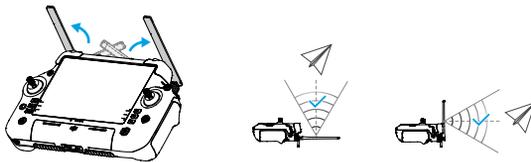
### 3.1 Charging the Battery



- ⚠ • Charge the remote controller to activate the internal battery before using for the first time.

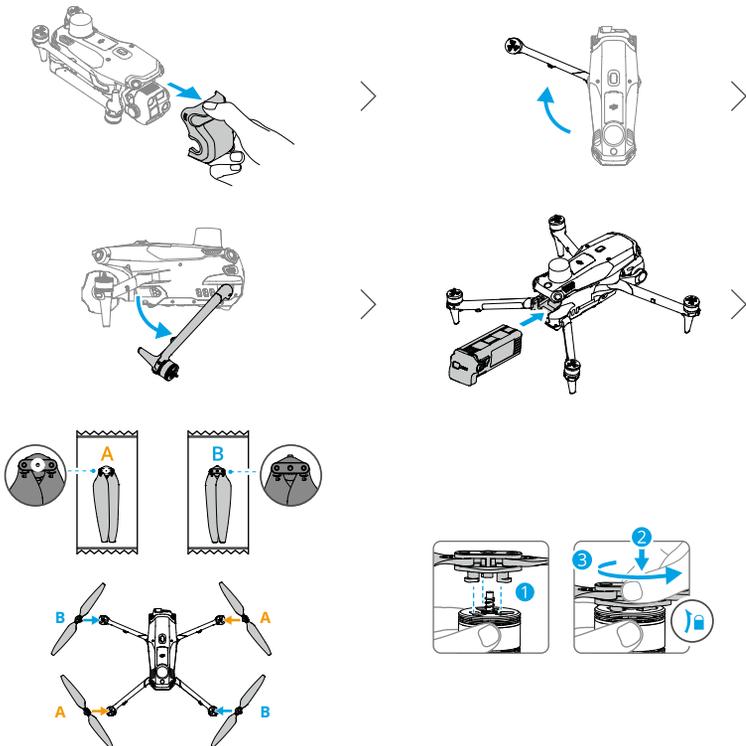
### 3.2 Preparing the Remote Controller

#### Adjusting the Antennas



### 3.3 Preparing the Aircraft

1. Remove the gimbal protector from the camera.
2. Unfold the front arms.
3. Unfold the rear arms.
4. Install the Intelligent Flight Battery.
5. Match the propellers to motors. Press the propellers down and rotate until they click in place.



### 3.4 Activation

The aircraft and remote controller require activation before using for the first time. Press, and then press again and hold the power button to power on the devices. Follow the

on-screen prompts to activate. Ensure that the remote controller can access the internet during activation.

## 3.5 Basic Flight

### Pre-Flight Checklist

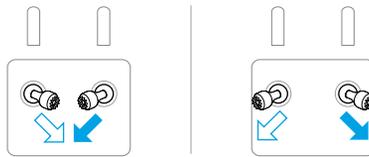
1. Make sure the remote controller and the aircraft batteries are fully charged, and that both of the battery buckles pop out ensuring that the Intelligent Flight Battery is installed firmly.
2. Make sure there are no foreign objects inside the aircraft or its components, such as water, oil, soil, or sand. Make sure the air vents of the aircraft, the cooling holes of the camera, and the ventilation holes of the motor are not blocked. Ports such as the E-Port must be closed firmly if not used.
3. Make sure the propellers are of the same model and securely mounted. Make sure the motors or propellers are not damaged or deformed, there are no foreign objects in or on the motors or propellers, and the propeller blades and arms are unfolded.
4. Make sure the lenses of the vision systems, the cameras, the glass of the infrared sensors, and the auxiliary lights are clean, free of stickers, and not blocked in any way.
5. Make sure to remove the gimbal protector before powering on the aircraft.
6. Make sure the remote controller antennas are adjusted to the proper position.
7. Make sure the firmware of all devices and DJI Pilot 2 have been updated to the latest versions.
8. Power on the aircraft and the remote controller, and toggle the flight mode switch to N-mode. Make sure the status LED on the remote controller and the battery level indicators on the aircraft are solid green. This indicates that the aircraft and the remote controller are linked, and the remote controller is in control of the aircraft.
9. Make sure your flight area is inside approved zones for UAVs, and flight conditions are suitable for flying the aircraft. Place the aircraft on open and flat ground. Make sure there are no obstacles, buildings, or trees nearby and that the aircraft is 5 m away from the pilot. The pilot should be facing the rear of the aircraft.
10. To ensure flight safety, enter the flight view of DJI Pilot 2 and check the parameters on the preflight checklist.
11. Make sure DJI Pilot 2 is properly opened to assist your operation of the aircraft.  
WITHOUT THE FLIGHT DATA RECORDED BY THE DJI Pilot 2 APP, IN CERTAIN SITUATIONS (INCLUDING THE LOSS OF YOUR AIRCRAFT), DJI MAY NOT BE ABLE TO PROVIDE AFTER SALES SUPPORT TO YOU OR ASSUME LIABILITY.

12. Divide the airspace for flight when multiple aircraft are operating simultaneously in order to avoid collision mid-air.

## Starting/Stopping the Motors

### Starting the Motors

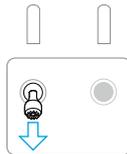
Perform one of the Combination Stick Commands (CSC) as shown below to start the motors. Once the motors have started spinning, release both sticks simultaneously.



### Stopping the Motors

The motors can be stopped in two ways:

**Method 1:** When the aircraft has landed, push the throttle stick down and hold until the motors stop.



**Method 2:** When the aircraft has landed, perform one of the CSC as shown below until the motors stop.



## Stopping the Motors Mid-Flight

 • Stopping the motors mid-flight will cause the aircraft to crash.

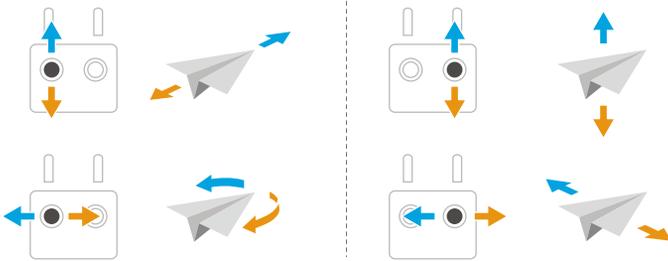
The Combination Stick Command (CSC) can be used to stop the motors once the flight controller detects critical error during flight.

## Controlling the Aircraft

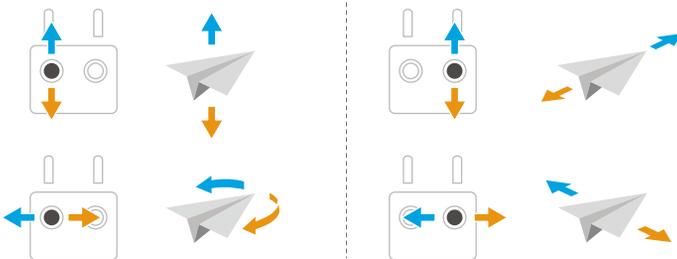
The control sticks of the remote controller can be used to control the aircraft movements. The control sticks can be operated in Mode 1, Mode 2, or Mode 3, as shown below.

The default control mode of the remote controller is Mode 2. In this manual, Mode 2 is used as an example to illustrate how to use the control sticks. The more the stick is pushed away from the center, the faster the aircraft moves.

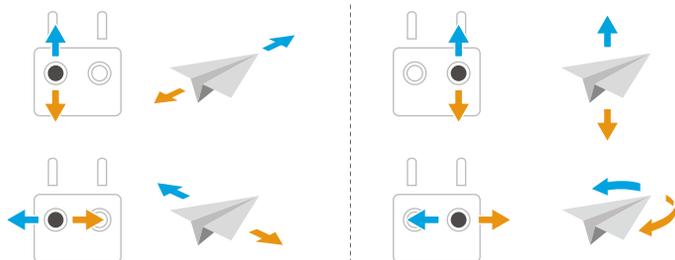
### Mode 1



### Mode 2



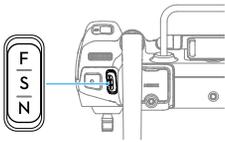
Mode 3



## 4 Aircraft

### 4.1 Flight Modes

The aircraft supports the following flight modes, which can be switched via the Flight Mode switch on the remote controller.



Position	Flight Mode
F	Function mode
S	Sport mode
N	Normal mode

#### Normal Mode

Normal Mode is suitable for most flight scenarios. The aircraft can hover precisely, fly stably, and use Intelligent Flight Modes. If obstacle sensing is enabled, obstacles can also be avoided using the vision system.

#### Sport Mode

The maximum horizontal flight speed of the aircraft will be higher when compared with Normal mode. Note that obstacle sensing is disabled in Sport Mode.

#### Function Mode

Function mode can be set to T-mode (Tripod mode) or A-mode (Attitude mode) in DJI Pilot 2. T-mode is based on Normal mode. The flight speed is limited to allow easier control of the aircraft. Attitude mode must be used with caution.

The aircraft automatically changes to Attitude (ATTI) mode when the vision systems are unavailable or disabled and the GNSS signal is weak or the compass experiences interference. In ATTI mode, the aircraft may be more easily affected by its surroundings. Environmental factors such as wind can result in horizontal drift of the aircraft, which may present hazards, especially when flying in confined spaces. The aircraft will not be able to hover or brake automatically, therefore the pilot should land the aircraft as soon as possible to avoid accidents.

If the aircraft is flying in the EU, the aircraft will switch to Low Speed mode when the flight mode is switched to F (T-mode) on the remote controller. Low Speed mode limits the maximum horizontal flight speed to 2.8 m/s based on Normal mode, and there is no limit for the ascent or descent speed.

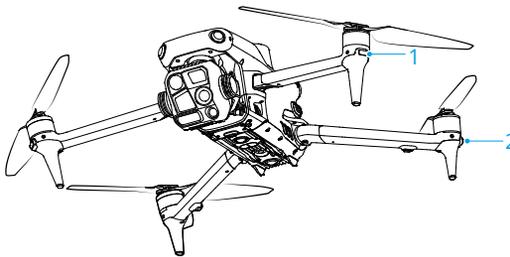


- DO NOT switch from Normal mode to other modes unless you are sufficiently familiar with the aircraft behavior under each flight mode. You must turn on

Multiple Flight Modes in DJI Pilot 2 before switching from Normal mode to other modes.

- ⚠ • The vision systems are disabled in Sport mode, which means the aircraft cannot sense obstacles on its route automatically. The user must stay alert to the surrounding environment and control the aircraft to avoid obstacles.
- The maximum flight speed and braking distance of the aircraft significantly increases in Sport mode. When flying in windless conditions, make sure to maintain enough braking distance to ensure flight safety.
- When the aircraft is ascending or descending in Sport mode or Normal mode in windless conditions, make sure to maintain enough vertical braking distance to ensure flight safety.
- The responsiveness of the aircraft significantly increases in Sport mode, which means a small control stick movement on the remote control device translates into the aircraft moving a large distance. Make sure to maintain adequate maneuvering space during flight.

## 4.2 Aircraft Status Indicator



1. Front LED

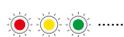
2. Aircraft Status Indicator

When the aircraft is powered on but the motors are not running, the front LEDs glow solid red to display the orientation of the aircraft.

**When the aircraft is powered on, but the motors are not running,** the aircraft status indicators will display the current status of the aircraft.

### Aircraft Status Indicators Descriptions

#### Normal States



Blinks red, yellow, and green alternately

Powering on and performing self-diagnostic tests

 × 4 .....	Blinks yellow four times	Warming up
 .....	Blinks green slowly	GNSS enabled
 × 2 .....	Blinks green twice repeatedly	Vision systems enabled
 .....	Blinks yellow slowly	GNSS and vision system disabled (ATTI mode enabled)
<b>Warning States</b>		
 .....	Blinks yellow quickly	Remote controller signal lost
 .....	Blinks red slowly	Takeoff is disabled (e.g., low battery) <sup>[1]</sup>
 .....	Blinks red quickly	Critically low battery
 —	Solid red	Critical error
 .....	Blinks red and yellow alternately	Compass calibration required

[1] If the aircraft cannot take off while the status indicators are blinking red slowly, view the warning prompt in DJI Pilot 2.

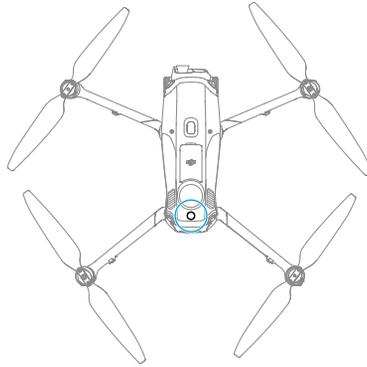
**After the motors start**, the front LEDs blink red and green alternately, and the aircraft status indicators blink green.



- Lighting requirements vary depending on the region. Observe local laws and regulations.
- To obtain better footage, the front LEDs turn off automatically when taking photos and videos if the front LEDs are set to Auto in DJI Pilot 2.

## 4.3 Beacon

The beacon on the aircraft enable you to find the aircraft when flying at night. The beacon can be manually turned on or off in DJI Pilot 2.



- 
- ⚠** • DO NOT look directly at the beacons when they are in use to avoid damaging your eyes.
- 

## 4.4 Propellers

The aircraft uses the standard propellers by default <sup>[1]</sup>. Use the low-noise propellers to reduce the noise or to comply with EU regulatory requirements.

[1] The aircraft uses low-noise propellers in EU region by default.

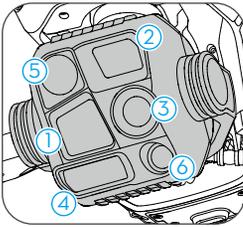
### Notice

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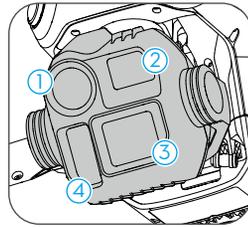
- ⚠** • The propeller blades are sharp. Handle with care to avoid personal injury or propeller deformation.
- Make sure that the propellers and motors are installed securely before each flight.
  - Only use official DJI propellers. DO NOT mix propeller types.
  - Propellers are consumable components. Purchase additional propellers if necessary.
  - Make sure that all propellers are in good condition before each flight. DO NOT use aged, chipped, or broken propellers. Clean the propellers with a soft, dry cloth if there is any foreign matter attached.
  - To avoid injury, stay away from rotating propellers or motors.
  - To avoid damaging the propellers, place the aircraft correctly during transportation or storage. DO NOT squeeze or bend the propellers. If propellers are damaged, the flight performance may be affected.

- Make sure the motors are mounted securely and rotating smoothly. Land the aircraft immediately if a motor is stuck and unable to rotate freely.
- DO NOT attempt to modify the structure of the motors.
- DO NOT touch or let hands or body parts come in contact with the motors after flight, as they may be hot.
- DO NOT block any of the ventilation holes on the motors or the body of the aircraft.
- Make sure the ESCs sound normal when powered on.

## 4.5 Camera



DJI Matrice 4T



DJI Matrice 4E

- |                       |                            |
|-----------------------|----------------------------|
| 1. Tele camera        | 4. Laser Range Finder      |
| 2. Medium Tele Camera | 5. Infrared Thermal Camera |
| 3. Wide-Angle Camera  | 6. NIR Auxiliary Light     |



- Due to the characteristics of the infrared sensor, the infrared sensor may become burnt before sunburn protection is triggered. DO NOT expose the infrared camera lenses to strong sources of energy such as the sun, lava, or a laser beam. Otherwise, the camera sensor may become burnt leading to permanent damage.
- Make sure the temperature and humidity are suitable for the camera during use and storage.
- Use a lens cleaner to clean the lens to avoid damage or poor image quality.
- DO NOT block any ventilation holes on the camera as the heat generated may damage the device or cause injury.

## Storing and Exporting Photos and Videos

The aircraft supports the use of a microSD card to store photos and videos. Refer to the Specifications for more information about recommended microSD cards.

Remove the microSD card from the aircraft and insert it into a card reader, and export the footage in the microSD card through the card reader.

- 
- ⚠ • Ensure that the SD card slot and the microSD card are clean and free of foreign objects during use.
  - DO NOT remove the microSD card from the aircraft when taking photos or videos. Otherwise, the microSD card may be damaged.
  - Check camera settings before use to ensure they are configured correctly.
  - Before shooting important photos or videos, shoot a few images to test whether the camera is operating correctly.
  - Make sure to power off the device correctly. Otherwise, the camera parameters will not be saved, and any recorded videos may be affected. DJI is not responsible for any loss caused by an image or video recorded in a way that is not machine-readable.
  - Photos and videos cannot be transmitted or copied from the camera if the aircraft is powered off.
- 

## 4.6 Gimbal

### Gimbal Angle

Use the gimbal dial on the remote controller to control the tilt of the camera.

Alternatively, enter the camera view in DJI Pilot 2. Press the screen until a circle appears and drag the circle up and down to control the tilt of the camera.

### Gimbal Notice

- 
- ⚠ • Make sure the frame arms are completely unfolded before powering on. Otherwise, the gimbal rotation may be obstructed and malfunction may occur.
  - Make sure there are no stickers or objects on the gimbal before taking off. DO NOT tap or knock the gimbal after the aircraft is powered on. Take off the aircraft from open and flat ground to protect the gimbal.
  - Avoid getting dust or sand on the gimbal, especially in the gimbal motors.

- DO NOT add any extra payload other than an official accessory to the gimbal, as this may cause the gimbal to function abnormally or even lead to permanent motor damage.
- Precision elements in the gimbal may be damaged by a collision or impact, which may cause the gimbal to function abnormally. Make sure to protect the gimbal from damage.
- A gimbal motor may enter protection mode if the gimbal is obstructed by other objects when the aircraft is put on uneven ground or on grass, or if the gimbal experiences an excessive external force, such as during a collision.
- Remove the gimbal protector before powering on the device. Attach the gimbal protector when the device is not in use.
- Flying in heavy fog or clouds may make the gimbal wet, leading to temporary failure. The gimbal will recover full functionality once it is dry.

## 4.7 Intelligent Flight Battery

### Notice



- Refer to the Safety Guidelines and the stickers on the battery before use. Users shall take full responsibility for all operation and usage.

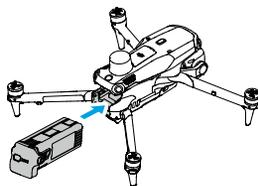
1. DO NOT charge an Intelligent Flight Battery immediately after flight as it may be too hot. Wait for the battery to cool down to the allowable charging temperature before charging again.
2. To prevent damage, the battery only charges when the battery temperature is within the allowable charging temperature. The ideal charging temperature is from 22° to 28° C (71.6° to 82.4° F). Charging at the ideal temperature range can prolong battery life. Charging stops automatically if the temperature of the battery cells exceed 55° C (131° F) during charging.
3. Low Temperature Notice:
  - Batteries cannot be used in extremely low-temperature environments of lower than -10° C (14° F).
  - Battery capacity is significantly reduced when flying in low-temperature environments. Hover the aircraft in place for a while to warm up the battery after takeoff.
  - In low-temperature environments, it is recommended to warm up the battery to room temperature before take off and keep the battery warm before use

to reduce the warm-up time. In extremely cold weather, insulate the battery as required.

- The reduced battery capacity in low-temperature environments reduces the wind speed resistance performance of the aircraft. Fly with caution.
  - Take extra caution when flying at a high elevation with a low temperature.
  - When the aircraft is in flight after the above conditions are satisfied, and the DJI Pilot 2 app shows a critically low battery level warning, the user is advised to stop flying immediately and land the aircraft in an appropriate place. During auto landing, users can still use the remote controller to control the aircraft's orientation. For example, users can push the throttle stick to lift the aircraft.
4. A fully charged battery will automatically discharge when it is idle for a period of time. Note that it is normal for the battery to emit heat during the discharging process.
  5. Fully charge the battery at least once every three months to maintain battery health. If the battery is not used for an extended period, battery performance may be affected or may even cause permanent battery damage. If a battery has not been charged or discharged for three months or more, the battery will no longer be covered by the warranty.
  6. For safety purposes, keep the batteries at a low power level in transit. Before transportation, it is recommended to discharge the batteries to 30% or lower.
  7. Over-discharge protection is enabled and discharging stops automatically to prevent over-discharge when the aircraft is idle. Charge the battery to wake it from over-discharge protection before using again. Over-discharge protection is not enabled during flight.
  8. Over-discharging will lead to serious damage of the battery. If the battery level is less than 10% while the aircraft is idle, the battery enters Hibernation mode to prevent over-discharge.

## Inserting/Removing the Battery

Insert the Intelligent Flight Battery into the battery compartment of the aircraft. Make sure the battery is fully inserted with a clicking sound, which indicates the battery buckles are securely fastened.



Press the battery buckle to remove the battery from the compartment.

- ⚠ • DO NOT insert or remove the battery while the aircraft is powered on.
- Ensure the battery is inserted with a clicking sound. DO NOT launch the aircraft when the battery is not securely mounted, as this may cause poor contact between the battery and the aircraft and present hazards. Make sure the battery is mounted securely.

## Checking the Battery Level

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

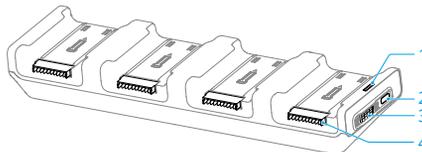
The battery level LEDs display the power level of the battery during charging and discharging. The statuses of the LEDs are defined below:

- LED is on
- ◉ LED is flashing
- LED is off

Blinking Pattern	Battery Level
● ● ● ●	92-100%
● ● ● ◉	76-91%
● ● ● ○	63-75%
● ● ◉ ○	51-62%
● ● ○ ○	38-50%
● ◉ ○ ○	26-37%
● ○ ○ ○	13-25%
◉ ○ ○ ○	0-12%

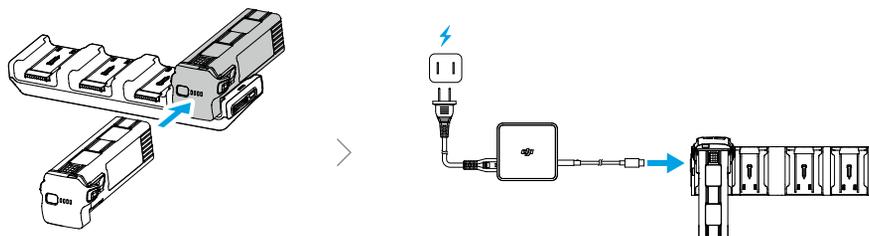
## Charging the Battery

### Using the Charging Hub



1. Status LED
2. Power Port
3. Mode Switch
4. Battery Port

## Usage



Toggle the mode switch to select a charging mode.

**100%** **Standard Mode:** Each battery is charged to 100% in sequence.

**90%** **Ready-to-Fly Mode:** Each battery is charged to 90% in sequence and kept at 90% after charging. This mode facilitates quick use of batteries.

The Intelligent Flight Battery with the highest power level will be charged first, and then the rest will be charged in sequence according to their power levels.

Disconnect the Intelligent Flight Battery from the charging hub when charging is complete.

## Status LED Descriptions

Blinking Pattern	Description
Solid yellow	No battery is inserted
Pulses green	Charging the battery
Solid green	Charging completed
Blinks yellow	Recoverable abnormality of battery or charging hub (no further operation needed, charging can continue after battery or charging hub automatically recovers)
Solid red	Unrecoverable abnormality of battery or charging hub (remove and reinsert the battery or unplug and plug in the adapter)

- ⚠ • The DJI 100W USB-C Power Adapter is required when using the charging hub to charge Intelligent Flight Batteries.
- The charging hub is only compatible with specific model of the Intelligent Flight Battery. DO NOT use the charging hub with other battery models.

- Place the charging hub on a flat and stable surface when in use. Make sure the device is properly insulated to prevent fire hazards.
- DO NOT touch the metal terminals on the battery ports. Clean the metal terminals with a clean, dry cloth if there is any noticeable buildup.

## Battery Level LEDs

The table below shows the battery level during charging.

Blinking Pattern	Battery Level
	0-50%
	51-75%
	76-99%
	100%

## Battery Protection Mechanisms

The battery level LEDs can display battery protection notifications triggered by abnormal charging conditions.

LEDs	Blinking Pattern	Status
	LED2 blinks twice per second	Overcurrent detected
	LED2 blinks three times per second	Short circuit detected
	LED3 blinks twice per second	Overcharge detected
	LED3 blinks three times per second	Over-voltage charger detected
	LED4 blinks twice per second	Charging temperature is too low
	LED4 blinks three times per second	Charging temperature is too high

If any of the battery protection mechanisms are activated, unplug the charger, and plug it in again to resume charging. If the charging temperature is abnormal, wait for it to return to normal. The battery will automatically resume charging without the need to unplug and plug in the charger again.

## 4.8 Aircraft RTK

The built-in RTK module of the aircraft can withstand strong magnetic interference from metal structures and high-voltage lines, ensuring safe and stable flight. When used with

a D-RTK product (sold separately) or a DJI-approved Network RTK service, more accurate positioning data can be obtained.

- 
- Visit <https://enterprise.dji.com/matrice-4-series/downloads> to view the accessory user guide and learn about how to use the product.
- 

## Enabling/Disabling RTK

Ensure that the RTK function is enabled and the RTK service type is correctly set before each use. Otherwise, RTK cannot be used for positioning. Go to DJI Pilot 2, tap **Camera View** > ... >  to view and check the settings.

- 
- RTK positioning can be enabled and disabled during flight.
  - After RTK is enabled, Maintain Positioning Accuracy Mode can be used.
- 

## Custom Network RTK

To use Custom Network RTK, make sure that the remote controller has been mounted with DJI Cellular Dongle 2 and install a nano-SIM card, or that the remote controller has a Wi-Fi connection. Keep the remote controller powered on and connected to the internet when using this function. Custom Network RTK can be used to replace the RTK station. Connect the Custom Network RTK account to the designated NTRIP server to send and receive differential data.

1. Make sure that the remote controller is connected to the aircraft and the internet.
2. Go to DJI Pilot 2, tap **Camera View** > ... > , select Custom Network RTK as the RTK service type and fill in the required information. Then tap **Save**.
3. Wait to connect to the NTRIP server. In the RTK settings, when the status of the aircraft's positioning in the status table shows "FIX", it indicates that the aircraft has obtained and used differential data from Network RTK.

## 4.9 Return to Home

Carefully read the contents of this section to ensure you are familiar with the behavior of the aircraft in Return-to-Home (RTH).

The Return to Home (RTH) function will automatically fly the aircraft back to the last recorded Home Point. RTH can be triggered in three ways: the user actively triggers RTH, the aircraft has low battery, or the remote controller signal has been lost (Failsafe RTH is triggered). If the aircraft has recorded the Home Point successfully and the positioning

system is functioning normally, when the RTH function is triggered, the aircraft will automatically fly back and land at the Home Point.

- 
-  • **Home Point:** The Home Point will be recorded at takeoff as long as the aircraft has a strong GNSS signal  26 or the lighting is sufficient. After the Home Point is recorded, DJI Pilot 2 will issue a voice prompt. If it is necessary to update the Home Point during a flight (such as if you have changed your position), the Home Point can be manually updated in **\*\*\* > ⌘ > Control** in DJI Pilot 2.
- 

During RTH, the AR RTH route will be displayed on the camera view, helping you to view the return path and ensure flight safety. The camera view also displays the AR Landing Point. When the aircraft reaches the area above the Home Point, the gimbal camera will automatically flip downwards. The AR aircraft shadow will appear in the camera view when the aircraft is approaching the ground, enabling you to control the aircraft to land more accurately in your preferred location. The display can be changed in **\*\*\* > ⌘ > Assist**.

- 
-  • The AR RTH route is only used for reference, and may deviate from the actual flight route in different scenarios. Always pay attention to the liveview on the screen during RTH. Fly with caution.
  - During RTH, the aircraft will automatically adjust the gimbal tilt to point the camera toward the RTH route by default. Using the gimbal dial to adjust the camera orientation or pressing the customizable buttons on the remote controller to recenter the camera will stop the aircraft from automatically adjusting the gimbal tilt, which may prevent the AR RTH route from being viewed.
- 

## Notice

- 
-  • The aircraft may not be able to return to the Home Point as normal if the positioning system is functioning abnormally. During Failsafe RTH, the aircraft may enter ATTI mode and land automatically if the positioning system is functioning abnormally.
  - When there is no GNSS, do not fly over water surfaces, buildings with glass surface, or in scenarios where the altitude above the ground is greater than 30 meters. If the positioning system is functioning abnormally, the aircraft will enter ATTI mode.
  - It is important to set a suitable RTH altitude before each flight. Launch DJI Pilot 2 and set the RTH altitude. The default RTH altitude is 100 m.

- The aircraft cannot sense obstacles during RTH if the environment conditions are not suitable for the sensing system.
- GEO zones may affect the RTH. Avoid flying near GEO zones.
- The aircraft may not be able to return to a Home Point if the wind speed is too high. Fly with caution.
- Pay extra attention to small or fine objects (such as tree branches or power lines) or transparent objects (such as water or glass) during RTH. Exit RTH and control the aircraft manually in an emergency.
- Set Advanced RTH as **Preset** if there are power lines or transmission towers that the aircraft cannot bypass on the RTH path and make sure the RTH Altitude is set higher than all obstacles.
- The aircraft will brake and return to home according to the latest settings if the **Advanced RTH** settings in DJI Pilot 2 are changed during RTH.
- If the max altitude is adjusted below the current altitude during RTH, the aircraft will descend to the max altitude first and then continue returning to home.
- The RTH Altitude cannot be changed during RTH.
- If there is a large difference between the current altitude and the RTH altitude, the amount of battery power used cannot be calculated accurately due to wind speed differences at different altitudes. Pay extra attention to the battery power prompts and warning prompts in DJI Pilot 2.
- When the remote controller signal is normal during Advanced RTH, the pitch stick can be used to control the flight speed, but the orientation and altitude cannot be controlled and the aircraft cannot be controlled to fly to the left or right. Constantly pushing the pitch stick to accelerate will increase the battery power consumption speed. The aircraft cannot bypass obstacles if the flight speed exceeds the effective sensing speed. The aircraft will brake and hover in place and exit RTH if the pitch stick is pushed all the way down. The aircraft can be controlled after the pitch stick is released.
- If the aircraft reaches the altitude limit of the aircraft current location or of the Home Point while it is ascending during Preset RTH, the aircraft stops ascending and returns to the Home Point at the current altitude. Pay attention to flight safety during RTH.
- If the Home Point is within the Altitude Zone but the aircraft is not in the Altitude Zone, when the aircraft reaches the Altitude Zone it will descend below the altitude limit, which may be lower than the set RTH altitude. Fly with caution.
- If the OcuSync video transmission is obstructed and disconnects, the aircraft can only rely on 4G enhanced transmission. Considering there may be large obstacles on the RTH route, to ensure safety during RTH, the RTH route will take

the previous flight path as reference. When using 4G enhanced transmission, pay more attention to the battery status and the RTH route in the map.

- The aircraft will exit RTH if the surrounding environment is too complex to complete RTH, even if the sensing system is working properly.
- RTH cannot be triggered during auto landing.

---

## Advanced RTH

When Advanced RTH is triggered, the aircraft will automatically plan the best RTH path, which will be displayed in DJI Pilot 2 and will be adjusted according to the environment. During RTH, the aircraft will adjust the flight speed automatically according to environmental factors such as the wind speed, wind direction, and obstacles.

If the control signal between the remote controller and the aircraft is good, exit RTH by pressing the RTH button or the flight pause button on the remote controller. After exiting RTH, you will regain control of the aircraft.

## Trigger Method

### The user actively triggers RTH

During flight, you can trigger RTH by pressing and holding the RTH button on the remote controller.

### Aircraft low battery

During flight, if the battery level is low and only sufficient to fly to the Home Point, a warning prompt will appear in DJI Pilot 2. If you tap to confirm RTH or do not take action before the countdown ends, the aircraft will automatically initiate low battery RTH.

If you cancel the low battery RTH prompt and continue flying the aircraft, the aircraft will land automatically when the current battery level can only support the aircraft long enough to descend from its current altitude.

Auto landing cannot be cancelled but you can still fly the aircraft horizontally by moving the pitch stick and roll stick, and change the descent speed of the aircraft by moving the throttle stick. Fly the aircraft to a suitable place for landing as soon as possible.



- When the Intelligent Flight Battery level is too low and there is not enough power to return home, land the aircraft as soon as possible. Otherwise, the aircraft will crash after the battery power is completely depleted.
  - DO NOT keep pushing the throttle stick upward during auto landing. Otherwise, the aircraft will crash after the battery power is completely depleted.
-

## Loss of remote controller signal

When the remote controller signal is lost, the aircraft will automatically initiate Failsafe RTH if the Signal Lost Action is set to RTH.

When the lighting and environment conditions are suitable for the vision system, DJI Pilot 2 will display the RTH path that was generated by the aircraft before the signal was lost. The aircraft will start RTH using Advanced RTH according to the RTH settings. The aircraft will remain in RTH even if the remote controller signal is restored. DJI Pilot 2 will update the RTH path accordingly.

When the lighting and environment conditions are unsuitable for the vision system, the aircraft will brake and hover, then enter Original Route RTH.

- If the RTH distance (the horizontal distance between the aircraft and the Home Point) is farther than 50 m, the aircraft adjusts its orientation and flies backward for 50 m on its original flight route before entering Preset RTH.
- If the RTH distance is farther than 5 m but less than 50 m, the aircraft adjusts its orientation and flies straight horizontally back to the home point at the current altitude.
- The aircraft lands immediately if the RTH distance is less than 5 m.

## RTH Procedure

After Advanced RTH is triggered, the aircraft brakes and hovers in place.

- **When the environment or lighting conditions are suitable for the vision system:**
  - The aircraft will adjust its orientation to the Home Point, plan the best path according to the RTH settings and then return to the Home Point if GNSS was available when takeoff.
  - If GNSS was unavailable and only the vision system was working when takeoff, the aircraft will adjust its orientation to the Home Point, plan the best path according to the RTH settings and then return to the position with strong GNSS signal based on the RTH settings. It will approximately follow the outbound trajectory back to the vicinity of the home point. At this time, pay attention to the app prompts and choose whether to let the aircraft automatically RTH and land or to manually control the RTH and landing.

### **Pay attention if GNSS was unavailable when takeoff:**

- Make sure that the obstacle avoidance is enabled.
- DO NOT fly in narrow spaces and the environmental wind speed should be less than 3 m/s.
- Fly to the open area and stay at least 10 meters away from any obstacles quickly after takeoff, otherwise, the aircraft may not be able to return to

home. During flight, avoid flying over water surfaces until reaching an area with strong GNSS signal. The altitude above the ground should be greater than 2 meters and less than 30 meters, otherwise, the aircraft may not be able to return to the home point. If the aircraft enters ATTI mode before reaching the area with strong GNSS signal, the home point will be invalidated.

- If the vision positioning is not available during flight, the aircraft cannot return to the home point. Pay attention to the environment according to the App voice prompts to prevent collisions.
- When the aircraft returns to the vicinity of the takeoff point and the App prompts when the current environment is complex, please confirm whether to continue flying:
  - You need to confirm whether the flight path is correct and pay attention to flight safety.
  - You need to confirm whether the lighting condition is sufficient for the vision system. If not, the aircraft may exit RTH. Forcing the aircraft to continue RTH or flight may cause it to enter ATTI mode.
- After confirmation, the aircraft will continue to return to the home point at a low speed. If an obstacle appears on the return path, the aircraft will brake and may exit RTH.
- This RTH process does not support obstacle detection in textureless scenes such as glass or white walls.
- This RTH process requires the ground and nearby environments (such as walls) to have rich textures and no dynamic changes.
- **When the environment or lighting conditions are not suitable for the vision system:**
  - If the RTH distance is further than 5 meters, the aircraft will return to home according to the **Preset**.
  - The aircraft lands immediately if the RTH distance is less than 5 m.

## Terrain Data

When the remote controller is connected to the internet, tap **\*\*\* > Assist** in DJI Pilot 2, and enable **Terrain Data**, the remote controller will automatically download the elevation database to the aircraft. Based on the terrain data, the aircraft can plan an optimal flight path to bypass obstacles along the path during RTH.

When terrain data is enabled,

- if the environment or lighting conditions are suitable for the vision system, the aircraft will automatically plan an optimal flight path based on the terrain data and the data

collected by the vision system. The optimal flight path will maintain a safe distance from the terrain obstacles.

- If the environment or lighting conditions are not suitable for the vision system, only the terrain data is effective. Safety risks may arise if the model data is inaccurate.

- 
- 💡 • Based on the terrain data, the aircraft will bypass the area that has weak GNSS signal to ensure aircraft positioning accuracy. If there are suspended models in the terrain data, such as cranes, power lines, and bridges, the aircraft will try to bypass the obstacles by flying above the objects.

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- ⚠️ • When the aircraft is using GNSS for positioning, the positioning accuracy is relatively low, and the obstacle bypassing performance may be affected. Users should fly with caution, and pay close attention to the flight route and the camera view.
- 

## RTH Settings

RTH settings are available for Advanced RTH. Go to the camera view in DJI Pilot 2, tap **☰** > **⚙️** > **Control**, and scroll to **Return to Home**.

- **Optimal:**



- If the lighting is sufficient and the environment is suitable for the vision system, the aircraft will automatically plan the optimal RTH path and adjust the altitude according to environmental factors, such as obstacles and transmission signals, regardless of the RTH Altitude setting. The optimal RTH path means the aircraft will travel the shortest distance possible to reduce the amount of battery power used and to increase flight time.
  - If the lighting is insufficient or the environment is not suitable for the vision system, the aircraft will perform Preset RTH based on the RTH Altitude setting.
- **Preset:**



RTH Distance/Altitude		Suitable Lighting and Environment Conditions	Unsuitable Lighting and Environment Conditions
RTH distance > 50 m	Current altitude < RTH altitude	The aircraft will plan the RTH path, fly to an open area while bypassing obstacles, ascend to the RTH Altitude, and return to home using the best path.	The aircraft will ascend to the RTH altitude, and fly to the Home Point in a straight line at the RTH altitude. <sup>[1]</sup>
	Current altitude ≥ RTH altitude	The aircraft will return to home using the best path at the current altitude.	The aircraft will fly to the Home Point in a straight line at the current altitude.
RTH distance is within 5-50 m			

[1] If the forward-facing LiDAR detects an obstacle ahead, the aircraft will ascend to avoid the obstacle. It will stop climbing once the path ahead is clear and then continue to RTH. If the obstacle height exceeds the altitude limit, the aircraft will brake and hover, and the user will need to take control.

- When **Return to Home** is set to **Preset**, a **Direct Landing** option will appear. When enabled, aircraft will directly land when arrives above the Home Point.

When the aircraft is approaching the Home Point, if the current altitude is higher than the RTH altitude, the aircraft will intelligently decide whether to descend while flying forward according to the surrounding environment, lighting, the set RTH altitude, and the current altitude. When the aircraft reaches the area above the Home Point, the current altitude of the aircraft will not be lower than the set RTH altitude.

The RTH plans for different environments, RTH trigger methods, and RTH settings are as follows:

RTH Trigger Method	Suitable Lighting and Environment Conditions (The aircraft can bypass obstacles and GEO zones)	Unsuitable Lighting and Environment Conditions
The user actively triggers RTH	The aircraft will execute RTH based on the RTH setting: <ul style="list-style-type: none"> <li>• Optimal</li> <li>• Preset</li> </ul>	Preset (The aircraft can ascend to bypass obstacles and GEO zones)
Aircraft low battery		Original route RTH, Preset RTH will be executed when the signal is restored (The aircraft can bypass GEO zones and will brake and hover if there is obstacle)
Loss of remote controller signal		

## Landing Protection

During RTH, landing protection activates once the aircraft begins to land.

The specific performance of the aircraft is as follows:

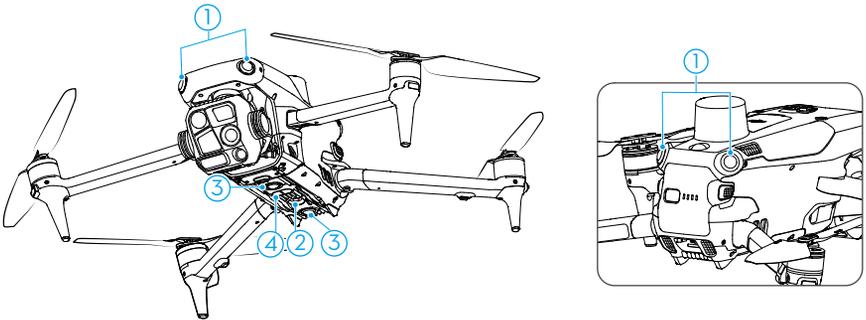
- If the ground is determined suitable for landing, the aircraft will land directly.
- If the ground is determined unsuitable for landing, the aircraft will hover and wait for pilot confirmation.
- If landing protection is not operational, DJI Pilot 2 will display a landing prompt when the aircraft descends to 0.5 m from the ground. Tap **Confirm** or push the throttle stick all the way down and hold for one second, and the aircraft will land.



- After reaching the area above the Home Point, the aircraft will land precisely on the takeoff point. Performing a precision landing is subject to the following conditions:
  - The Home Point must be recorded upon takeoff and must not be changed during flight.
  - During takeoff, the aircraft must vertically ascend at least 7 m before moving horizontally.
  - The Home Point terrain features must remain largely unchanged.
  - The terrain features of the Home Point must be sufficiently distinctive. Terrain such as a snow-covered field is not suitable.
  - The lighting conditions must not be too bright or too dark.

- During landing, movement of any other control stick apart from the throttle stick will be regarded as giving up precision landing, and the aircraft will descend vertically.

## 4.10 Sensing System



- |                                  |                               |
|----------------------------------|-------------------------------|
| 1. Omnidirectional Vision System | 3. Downward Vision System     |
| 2. Auxiliary Light               | 4. 3D Infrared Sensing System |

The omnidirectional vision system works best with adequate lighting and clearly marked or textured obstacles. The omnidirectional vision system will activate automatically when the aircraft is in Normal or Tripod mode and **Obstacle Avoidance Action** is set to **Avoid** or **Brake** in DJI Pilot 2. The positioning function is applicable when GNSS signals are unavailable or weak.

The auxiliary light located at the bottom of the aircraft can assist the downward vision system. It will automatically turn on by default in low-light environments when the flight altitude is under 5 m after takeoff. You can also turn it on or off manually in the DJI Pilot 2 app. Each time the aircraft is restarted, the auxiliary light will revert back to the default setting **Auto**.



- When Vision Positioning and Obstacle Sensing are disabled, the aircraft relies only on GNSS to hover, omnidirectional obstacle sensing is unavailable, and the aircraft will not automatically decelerate during descent close to the ground. Extra caution is required when Vision Positioning and Obstacle Sensing are disabled.
- Disabling Vision Positioning and Obstacle Sensing takes effect only when flying manually, and will not take effect when using auto modes such as RTH, or auto landing.

## Notice

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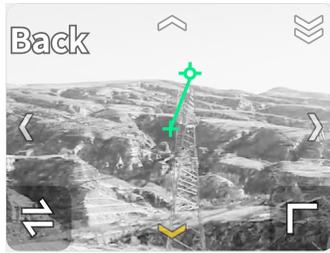
- ⚠ • Pay attention to the flight environment. The sensing system only works in certain scenarios and cannot replace human control and judgment. During a flight, always pay attention to the surrounding environment and the warnings in DJI Pilot 2, and be responsible for and maintain control of the aircraft at all times.
- If there is no GNSS available, the downward vision system will assist with aircraft positioning, and works best when the aircraft is at an altitude from 0.5 m to 30 m. Extra caution is required if the altitude of the aircraft is above 30 m as the vision positioning performance may be affected.
- In low-light environments, the vision system may not achieve optimal positioning performance even if the auxiliary light is turned on. Fly with caution if the GNSS signal is weak in such environments.
- The downward vision system may not work properly when the aircraft is flying near water. Therefore, the aircraft may not be able to actively avoid water below it when landing. It is recommended to maintain flight control at all times, make reasonable judgments based on the surrounding environment, and avoid over-relying on the downward vision system.
- The vision system cannot accurately identify large structures with frames and cables, such as tower cranes, high-voltage transmission towers, high-voltage transmission lines, cable-stayed bridges, and suspension bridges.
- The vision system cannot work properly near surfaces without clear pattern variations or where the lighting is too weak or too strong. The vision system cannot work properly in the following situations:
  - Flying near monochrome surfaces (e.g., pure black, white, red, or green).
  - Flying near highly reflective surfaces.
  - Flying near water or transparent surfaces.
  - Flying near moving surfaces or objects.
  - Flying in an area with frequent and drastic lighting changes.
  - Flying near extremely dark (<0.5 lux) or bright (>40,000 lux) surfaces.
  - Flying near surfaces that strongly reflect or absorb infrared waves (e.g., mirrors).
  - Flying near surfaces without clear patterns or textures.
  - Flying near surfaces with repeating identical patterns or textures (e.g., tiles with the same design).

- Flying near obstacles with small surface areas (e.g., tree branches, and power lines).
  - Keep the sensors clean at all times. DO NOT scratch or tamper with the sensors. DO NOT use the aircraft in dusty or humid environments.
  - The vision system cameras may need to be calibrated after being stored for an extended period. A prompt will appear in DJI Pilot 2 and calibration will be performed automatically.
  - DO NOT fly when it is rainy, smoggy, or the visibility is lower than 100 m.
  - DO NOT obstruct the sensing system.
  - Check the following each time before takeoff:
    - Make sure there are no stickers or any other obstructions over the glass of the sensing system.
    - Use a soft cloth if there is any dirt, dust, or water on the glass of the sensing system. DO NOT use any cleaning product that contains alcohol.
    - Contact DJI Support if there is any damage to the lenses of the sensing system.
  - The aircraft can fly at any time of the day or night. However, the vision system becomes unavailable when flying the aircraft in low-light environments. Fly with caution.
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## Vision Assist

The vision assist view changes the image on the view from the corresponding vision sensors according to the flight speed direction to help users navigate and observe obstacles during flight.

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- ⚠ • When using vision assist, the quality of the video transmission may be lower due to transmission bandwidth limits, or the video transmission resolution of the screen on the remote controller.
  - It is normal for propellers to appear in the vision assist view.
  - Vision assist should be used for reference only. Glass walls and small objects such as tree branches, electric wires, and kite strings cannot be displayed accurately.
  - Vision assist is not available when the aircraft has not taken off or when the video transmission signal is weak.
-



Tap the arrow to switch between different directions of the vision assist view. Tap and hold to lock the direction. Tap the center of the screen to maximize the vision assist view.

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- ⚠ • When the direction is not locked in a specific direction, the vision assist view automatically switches to the current flight direction. Tap any other directional arrow to switch the direction of the vision assist view for a while before returning to the view of the current flight direction.
  - When the vision assist direction is locked in a specific direction, tap any other arrow to unlock and switch the vision assist view.
- 
- 💡 • Tap the vision assist view in the camera view to enlarge it and the flight assistance functions will be displayed on the screen. Refer to [Primary Flight Display](#) for more information.
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## 4.11 Advanced Pilot Assistance Systems

The Advanced Pilot Assistance Systems (APAS) feature is available in Normal mode and Cine mode. When APAS is enabled, the aircraft will continue to respond to your commands and plan its path according to both control stick inputs and the flight environment. APAS makes it easier to avoid obstacles, obtain smoother footage, and give a better flying experience.

When APAS is enabled, the aircraft can be stopped by pressing the Flight Pause button on the remote controller. The aircraft brakes and hovers for three seconds and awaits further pilot commands.

To enable APAS, open DJI Pilot 2, go to \*\*\* > ⚙️, and select **Avoid** in Obstacle Avoidance.

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## Notice

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- ⚠ • Make sure to use APAS when the vision system is available. Pay attention to DJI Pilot 2 and make sure APAS is working normally.
  - Make sure there are no people, animals, objects with small surface areas (e.g., tree branches), or transparent objects (e.g., glass or water) along the desired flight path.
  - Make sure to use APAS when the downward vision system is available or the GNSS signal is strong. APAS may not function properly when the aircraft is flying over water or snow-covered areas.
  - Be extra cautious when flying in extremely dark (<300 lux) or bright (>10,000 lux) environments.
  - APAS may not function properly when the aircraft is flying near flight limits or in a GEO zone.
  - When the lighting becomes insufficient and the vision system is partially unavailable, the aircraft will switch from bypassing obstacles to braking and hovering. You need to center the control stick and then to continue controlling the aircraft.
- 

## Landing Protection

If **Obstacle Avoidance Action** is set to **Avoid** or **Brake**, Landing Protection will be activated when you push the throttle stick down to land the aircraft. Landing Protection is enabled once the aircraft begins to land.

- If the ground is determined to be suitable for landing, the aircraft will land directly.
- If the ground is determined to be unsuitable for landing, the aircraft will hover when the aircraft descends to a certain height above ground. Push down on the throttle stick for at least five seconds, and the aircraft will land without obstacle sensing.

## 4.12 DJI AirSense

Airplanes with an ADS-B transceiver will actively broadcast flight information including locations, flight paths, speeds, and altitudes. DJI aircraft incorporated with the DJI AirSense technology are capable of receiving flight information broadcast from ADS-B transceivers that comply with 1090ES or UAT standards within a radius range of 10 kilometers. Based on the received flight information, DJI AirSense can analyze and obtain the location, altitude, orientation, and velocity of the surrounding manned airplanes, and compare such figures with the current position, altitude, orientation, and velocity of the

DJI aircraft to calculate in real time the potential risk of collision with the surrounding manned airplanes. DJI AirSense will then display a warning message in DJI Pilot 2 according to the risk level.

DJI AirSense only issues warning messages on approaches by specific manned airplanes under special circumstances. Please be aware that DJI AirSense has the following limitations:

- DJI AirSense can only receive messages sent by airplanes installed with an ADS-B Out device that is in compliance with 1090ES (RTCA DO-260) or UAT (RTCA DO-282) standards. DJI devices cannot receive broadcast messages from or display warnings on airplanes not equipped with properly functioning ADS-B Out devices.
- If there is an obstacle between a manned aircraft and a DJI aircraft, DJI AirSense will not be able to receive ADS-B messages from the aircraft or send warnings to the user. Keenly observe your surroundings and fly with caution.
- Warning prompts may be sent with delay if DJI AirSense experiences any interference from the surrounding environment. Keenly observe your surroundings and fly with caution.
- Warning prompts may not be received if the DJI aircraft is unable to obtain information on its own location.
- DJI AirSense cannot receive ADS-B messages from manned airplanes or send warnings to the user when it is disabled or misconfigured.

When a risk is detected by the DJI AirSense system, the AR projection display will appear on the current view in DJI Pilot 2, intuitively showing the distance between the DJI aircraft and the airplane, and issuing a warning alert. Users should follow the instructions in DJI Pilot 2 upon receiving the alert.

**Notice:** A blue airplane icon will appear on the map.

**Caution:** The app will display the message **Manned aircraft detected nearby. Fly with caution.** A small orange square icon with the distance information will appear on the camera view, and an orange airplane icon will appear on the map view.

**Warning:** The app will display the message **Collision risk. Descend or ascend immediately.** If the user is not operating, the app will display **Collision risk. Fly with caution.** A small red square icon with the distance information will appear on the camera view, and a red airplane icon will appear on the map view. The remote controller will vibrate to alert.