Link

The dock and the aircraft are linked and activated during dock configuration. If a different aircraft is used, follow the instructions to link the dock and the aircraft:

1. Loose the screw of the electrical cabinet door using a 2.5 mm Hex Key. Pull to open the electrical cabinet door and view the operation panel.
2. Press, then press and hold the power button to power on the aircraft.
3. Press and hold the link button in the electrical cabinet, then press and hold the power button of the aircraft for more than five seconds. During the linking process, the dock cover status indicators will blink blue, and short beeps will sound from the dock.
4. When the linking process is successful, the dock status indicators will blink white.

The aircraft needs to be activated before using it for the first time. Follow the steps below to activate.

- Method 1: Make sure the dock and the aircraft are linked. Connect the USB-C port of the remote controller to the USB-A port of the dock electrical cabinet. Run DJI Pilot 2 and follow the prompts to activate.
- Method 2: Power on the aircraft and the remote controller, run DJI Pilot 2, select Matrice 3D Series on the homepage to link the remote controller to the aircraft, and follow the prompts in the app to activate.

- Make sure the remote controller is connected to the internet during activation.
- The dock can also be linked to the aircraft using the remote controller, refer to the Installation and Setup Manual for more information.

Flight Modes

The aircraft supports N mode (Normal), S mode (Sport), and F mode (Function) and flies in N mode by default. Flight modes can be switched using the remote controller B after gain aircraft control.

Normal Mode

In N mode, the aircraft uses GNSS to locate and stabilize itself when the GNSS signal is strong. When the GNSS is weak, but the lighting and other environmental conditions are sufficient, it uses the vision systems. When the Forward and Backward Vision Systems are enabled and lighting conditions are sufficient, the maximum tilt angle is 25 ° , and the maximum forward flight speed is 36 mph (54 kph).

Sport Mode

In Sport Mode, the aircraft uses GNSS for positioning and the aircraft is more responsive to control stick movements. Note that obstacle sensing is disabled and the maximum flight speed is 21 m/s in Sport Mode.

Function Mode

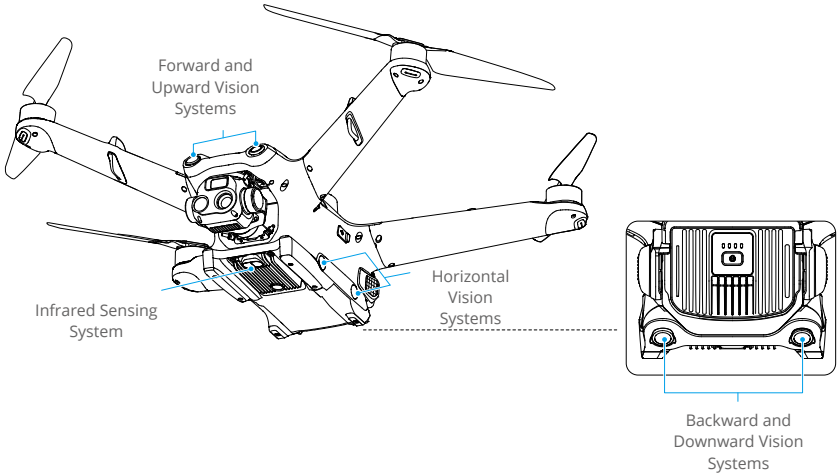
Function mode can be set to T-mode (Tripod mode) or A-mode (Attitude mode) in DJI Pilot 2. In Tripod mode, the aircraft is more stable during shooting Attitude mode must be used with caution.

The aircraft automatically changes to ATTI mode when the vision systems are unavailable or disabled and when 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 shifting, which may present hazards, especially when flying in confined spaces.

- 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 speed and braking distance of the aircraft significantly increase in Sport mode. A minimum braking distance of 30 m is required in windless conditions.
- A minimum braking distance of 10 m is required in windless conditions while the aircraft is ascending and descending in Sport mode or Normal mode.
- The responsiveness of the aircraft significantly increases in Sport mode, which means a small control stick movement on the remote controller translates into the aircraft moving a large distance. Make sure to maintain adequate maneuvering space when flying with the remote controller B.
- When switching the GNSS to the BeiDou satellite positioning system in DJI Pilot 2, the aircraft only uses a single positioning system and the satellite search capability becomes poor. Fly with caution.

Vision Systems and Infrared Sensing System



The aircraft is equipped with both an Infrared Sensing System and Horizontal, Upward, and Downward Vision Systems.

The Forward, Backward, and Upward vision systems consist of two cameras each. The horizontal vision system consists of four cameras in total. The vision systems sense obstacles by image ranging.

The Infrared Sensing System consists of two infrared modules. The downward vision system and infrared sensing system help the aircraft maintain its current position, hover more precisely, and fly indoors or in other environments where GNSS is unavailable.

⚠
- To ensure a safe and steady flight, DO NOT block the vision and infrared sensors.
- Clean the lenses of the vision and infrared sensing systems on a regular basis. If DJI FlightHub 2 prompts vision sensor lens blurred during flight tasks, clean the lenses in time.

Detection Range

Forward Vision System

Precision Measurement Range: 0.5-21 m; FOV: 90° (horizontal), 90° (vertical)

Backward Vision System

Precision Measurement Range: 0.5-16 m; FOV: 90° (horizontal), 104° (vertical)

Lateral Vision System

Precision Measurement Range: 0.5-23 m; FOV: 90° (horizontal), 90° (vertical)

Upward Vision System

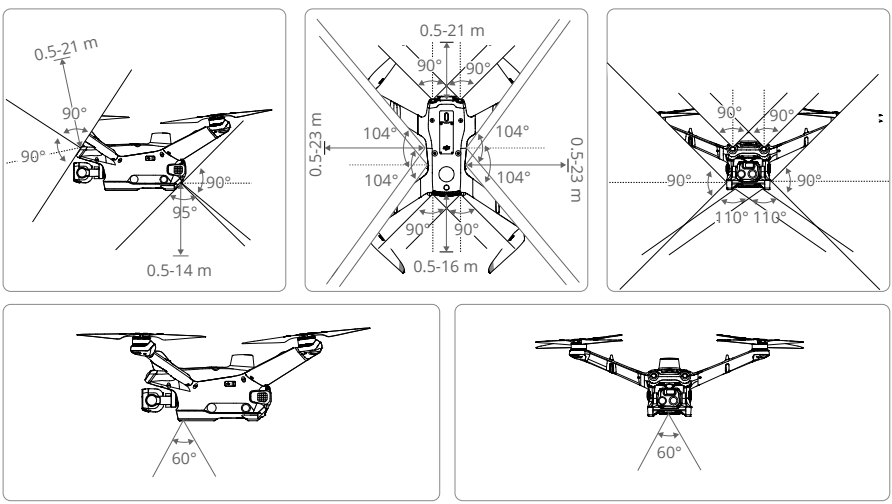
Precision Measurement Range: 0.5-21 m; FOV: 90° (front and back), 90° (left and right)

Downward Vision System

Precision Measurement Range: 0.5-14 m; FOV: 95° (front and back), 110° (left and right)
The Downward Vision System works best when the aircraft is at an altitude of 0.5 to 30 m.

Infrared Sensing System

Precision Measurement Range: 0.1-8 m (> 10% reflectivity); FOV: 60 ° (front and back), 60° (left and right)



⚠
- Be aware of the blind spots (marked gray) of the vision system and the infrared sensing system. The aircraft cannot sense obstacles that are out of the detection range.
- The aircraft cannot sense moving obstacles such as people, animals, or vehicles.

Using the Vision System

The positioning function of the Downward Vision System is applicable when GNSS signals are unavailable or weak. It is automatically enabled in Normal mode. The horizontal and upward vision systems will activate automatically when the aircraft is powered on if the aircraft is in N mode and Obstacle Avoidance is set to Brake in DJI Pilot 2. The horizontal and upward vision systems work best with adequate lighting and clearly marked or textured obstacles.

⚠
- Pay attention to the flight environment. The vision systems and infrared sensing system only work 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 FlightHub 2, and be responsible for the aircraft at all times.
- The downward vision system works best when the aircraft is at an altitude from 0.5 to 30 m if there is no GNSS available. Extra caution is required if the altitude of the aircraft is above 30 m as the vision positioning performance may be affected.
- 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 make reasonable judgments based on the surrounding environment, and avoid over-relying on the downward vision system.
- The vision system cannot work properly near surfaces without clear pattern variations or where the light is too weak or too strong. The vision system cannot work properly in the following situations:
  a. Flying near monochrome surfaces (e.g., pure black, white, red, or green).
  b. Flying near highly reflective surfaces.
  c. Flying near water or transparent surfaces.
  d. Flying near moving surfaces or objects.
  e. Flying in an area with frequent and drastic lighting changes.
  f. Flying near extremely dark (< 10 lux) or bright (> 40,000 lux) surfaces.
  g. Flying near surfaces that strongly reflect or absorb infrared waves (e.g., mirrors).
  h. Flying near surfaces without clear patterns or textures.
  i. Flying near surfaces with repeating identical patterns or textures (e.g., tiles with the same design).
  j. Flying near obstacles with small surface areas (e.g., tree branches).
- 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.
- DO NOT fly when it is rainy, smoggy, or the visibility is lower than 100 m.

- The infrared sensing systems may NOT detect the distance accurately in the following situations:
  a. Flying over surfaces that can absorb sound waves (e.g., asphalt road surfaces).
  b. A large area of strong reflectors situated at a distance of more than 15 m (e.g., multiple traffic signs placed side by side).
  c. Tiny obstacles (e.g., iron wires, cables, tree branches, or leaves).
  d. Mirrors or transparent objects (e.g., water or glass).
  e. In low-visibility environments (e.g., heavy fog or snow).
- DO NOT obstruct the vision cameras or the infrared sensors. DO NOT hang or place anything in an area that will block the vision systems, infrared sensing systems, and their observation range.
- Make sure that the sensor lens is clear and free of stains. DO NOT interfere with the vision systems and infrared sensing system in any way such as using a strong light source to illuminate the vision system or aiming specular reflectors towards the infrared sensor.
- Make sure that the sensor lens is clear and free of stains. Check the following before placing the aircraft on the dock:
  a. Make sure there are no stickers or any other obstructions over the glass of the infrared sensing systems and vision systems.
  b. Use soft cloth if there is any dirt, dust, or water on the glass of the vision systems and infrared sensing system. DO NOT use any cleaning product that contains alcohol.
  c. Contact DJI Support if there is any damage to the lenses of the infrared sensing and vision systems.

Vision Detection for Propellers

After the dock launches a flight task, the aircraft will perform vision detection for propellers before taking off. The following conditions are required for vision detection of propeller:

- DJI Matrice 3D Series propellers are used.
- In daytime when the lighting is sufficient.
- No vision system warnings in DJI FlightHub 2.
- When the aircraft is taking off before a flight route task.

When the above conditions are met, the following abnormal propellers can be detected:

- The front propeller is cracked by more than 7 mm.
- The rear propeller is cracked by more than 40 mm;

⚠ • When DJI FlightHub 2 prompts propeller error, check whether the propeller is damaged. Replace damaged propellers and restart the aircraft before flight tasks.

Return to Home

The Return to Home (RTH) function returns the aircraft back to the dock or the alternate landing site when the GNSS signal is strong. RTH can be triggered in three ways: user-initiated triggers, the aircraft has low battery, or the control signal between the dock and the aircraft is lost. Alternate Landing will be triggered if the dock is not suitable for landing. In this case, the aircraft will fly to and land on the alternate landing site.

Flight task will be interrupted and RTH will be triggered if any of these situation occurs:

- The aircraft approaches the GEO zones, or the flight distance approaches the maximum distance.
- The GNSS signal is poor during a flight route task.
- RTH is triggered in DJI FlightHub 2.
- If the Intelligent Flight Battery level is low, low Battery RTH will be triggered.
- If the aircraft disconnects from the dock, Signal Lost Action (Return to Home or Continue Task) will be triggered.

⚠
- Make sure to set an appropriate RTH Altitude when creating flight task plans. The RTH altitude should also be at least 5 m lower than the altitude limit of the GEO zone.
- The RTH feature will be disabled when the GNSS signal icon is red, or the GNSS is unavailable.
- GEO zones may affect the RTH. Avoid flying near GEO zones.
- The aircraft will exit RTH if the lighting and environment conditions are to complex to complete RTH, even if the vision systems are working properly.

Advanced RTH

When Advanced RTH is triggered, the aircraft will automatically plan the best RTH path, which will be displayed in DJI FlightHub 2 and will adjust according to the environment.

The user can cancel RTH after gaining aircraft control in DJI FlightHub 2. RTH can also be cancelled by pressing the Flight Pause button or the RTH button on the remote controller B after gaining aircraft control. After exiting RTH, users will regain control of the aircraft.

Trigger Method

- **The user actively triggers RTH**

  Advanced RTH can be initiated by clicking Return to Home in the device status window in DJI FlightHub 2.

- **Low battery of the aircraft**

  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.

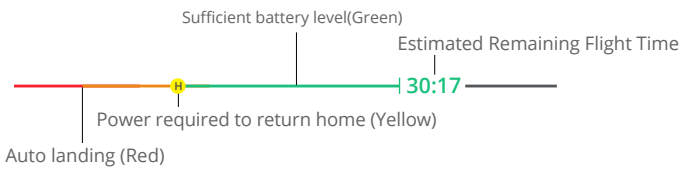
To avoid unnecessary danger caused by insufficient power, the aircraft automatically calculates if the battery power is sufficient to return to the Home Point according to the current position, environment, and flight speed. The flight task will be interrupted and Low Battery RTH will be triggered when the Intelligent Flight Battery is depleted to the point that the safe return of the aircraft may be affected.

Users can click Cancel RTH in the device status window to exit RTH. If RTH is canceled following the warning, the battery may not have enough power for the aircraft to land safely, which may lead to the aircraft crashing or being lost.

The aircraft will land automatically if the current battery level can only support the aircraft long enough to descend from its current altitude. Auto landing cannot be cancelled, but users can gain aircraft control using remote controller B, and control the horizontal movement and the descent speed of the aircraft during landing. If there is sufficient power, the throttle stick can be used to make the aircraft ascend at a speed of 1 m/s.

During auto landing, gain control using remote controller B and move the aircraft horizontally to find an appropriate place to land as soon as possible. The aircraft will fall if the user keeps pushing the throttle stick upward until the power is depleted.

The battery level indicator is displayed in the device status window:



Battery Level Warning	Implication	Flight
Low Battery RTH	The remaining battery level is only enough for the aircraft to fly to the Home Point.	Flight task will be interrupted and the aircraft will enter RTH. Dock landing detection will be triggered before landing.
Auto Landing	The remaining battery level is only enough for the aircraft to descend from its current altitude.	The aircraft will land automatically and dock landing detection will be triggered.

Estimated Remaining Flight Time	The estimated remaining flight time of the aircraft is based on its current battery level.	/

⚠ • The colored zones and the estimated remaining flight time on the battery level indicator are automatically adjusted according to the current location and status of the aircraft.

- **Lost of signal**

  The signal lost action can be set to Return to Home, Hover, or Continue. Go to Project Page in DJI FlightHub 2, and click > > Aircraft Control > Flight Settings > On Signal Lost to set the signal lost action. The signal lost action during a flight route task can be set to Return to Home or Continue Task in DJI FlightHub 2. If the Home Point was successfully recorded and the compass is functioning normally, Failsafe RTH automatically activates after the remote controller signal is lost.

  When the lighting is sufficient and the vision systems are working normally, DJI FlightHub 2 will display the RTH path that was generated by the aircraft before the remote controller signal was lost and return to home using Advanced RTH according to the RTH settings. The aircraft will remain in RTH even if the remote controller signal is restored. DJI FlightHub 2 will update the RTH path accordingly.

  When the lighting is not sufficient and the vision systems are not available, the aircraft will enter Original Route RTH. The aircraft will enter or remain in Preset RTH if the signal is restored during RTH. The procedure is as follows:

  1. The aircraft brakes and hovers in place.
  2. When RTH begins:
     - 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, it adjusts its orientation and flies to the Home Point in a straight line at the current altitude.
     - The aircraft lands immediately if it is less than 5 m from the Home Point when RTH begins.
  3. The aircraft lands and the motors stop after reaching the Home Point.

⚠

- The aircraft may not be able to return to the Home Point normally if the GNSS signal is weak or unavailable. The aircraft may enter ATTI mode if the GNSS signal becomes weak or unavailable after entering Failsafe RTH. The aircraft will hover in place for a while before landing.
- It is important to set a suitable RTH altitude before each flight. Set the RTH altitude in the device status window or in Plan Library in DJI FlightHub 2.
- When the lighting is insufficient and the environment is not suitable for the vision systems, the aircraft cannot avoid obstacles during RTH.
- The aircraft may not be able to return to the Home Point when the wind speed is too high. Fly with caution.
- Be aware of small or fine objects (such as tree branches or power lines) or transparent objects (such as water or glass) during RTH. In an emergency, exit RTH and control the aircraft manually using DJI FlightHub 2.

RTH Procedure

1. The Home Point is recorded. /
2. Advanced RTH is triggered.
3. The aircraft brakes and hovers in place. When RTH begins:
   - The aircraft lands immediately if it is less than 5 m from the Home Point when RTH begins.
   - If the RTH distance is farther than 5 m, the aircraft will plan the best path according to the RTH settings, lighting and environmental conditions.
4. The aircraft will fly automatically according to the RTH settings, environment, and transmission signal during RTH.
5. The aircraft begins landing after reaching the dock.

RTH Settings

RTH settings are available for Advanced RTH. Optimal RTH Route Planning can be enabled in the device status window under Live Flight Controls before taking off. Optimal RTH Route Planning can also be enabled in the task plan library.

1. Optimal:

- If the lighting is sufficient and the environment is suitable for the vision systems, 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 settings. The optimal RTH path means the aircraft will travel the shortest distance possible reducing the amount of battery power used and increasing flight time.
- If the lighting is insufficient and the environment is not suitable for vision systems, the aircraft will execute Preset RTH based on the RTH Altitude settings.

2. Preset:

<table>
<tr><th colspan="2">Lighting and Environment Conditions</th><th>Suitable for Vision Systems</th><th>Unsuitable for Vision Systems</th></tr>
<tr><td rowspan="2">RTH distance is more than 50 m</td><td>Current altitude < RTH altitude</td><td>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.</td><td>The aircraft will ascend to the RTH altitude, and fly to the Home Point in a straight line at the RTH altitude.</td></tr>
<tr><td>Current altitude ≥ RTH altitude</td><td rowspan="2">The aircraft will return to home using the best path at the current altitude.</td><td rowspan="2">The aircraft will adjusts its orientation and flies to the Home Point in a straight line at the current altitude.</td></tr>
<tr><td colspan="2">RTH distance is within 5-50 m</td></tr>
</table>

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 perform descending while flying forward according to the surrounding environment, lighting,

the set RTH altitude, and the current altitude. When the aircraft is above the Home Point,

the current altitude of the aircraft will not be lower than the set RTH altitude. **Note that when the lighting is insufficient and the environment is not suitable for the vision**

systems,

the aircraft cannot avoid obstacles. Make sure to set a safe RTH altitude and pay attention to the surrounding environment to ensure flight safety.

The RTH plan in different environments, RTH trigger methods, and RTH settings is as follows:

<table>
<tr><th rowspan="2">Lighting and Environment Conditions</th><th>Suitable for Vision Systems</th><th>Unsuitable for Vision Systems</th></tr>
<tr><td>The aircraft can fly bypass obstacles and GEO zones</td><td>The aircraft cannot bypass obstacles but can fly bypass GEO zones</td></tr>
<tr><td>The user actively triggers RTH</td><td rowspan="3">The aircraft will execute RTH based on RTH setting:
• Optimal
• Preset</td><td rowspan="2">Preset</td></tr>
<tr><td>Low battery of the aircraft</td></tr>
<tr><td>Lost of signal</td><td>Original route RTH,
Preset RTH will be executed when the signal is restored</td></tr>
</table>

⚠
- During Advanced RTH, the aircraft will adjust the flight speed automatically to suit environmental factors such as wind speed and obstacles.
- The aircraft cannot avoid small or fine objects such as tree branches or power lines. Fly the aircraft to an open area using Live Flight Controls in DJI FlightHub 2 before initiating RTH.
- The aircraft cannot avoid on the RTH path if there are power lines or towers. 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 RTH settings are changed during RTH.
- If the max altitude is set 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 in the current altitude and the RTH altitude, the amount of battery power used cannot be calculated accurately due to wind speeds at different altitudes. Pay extra attention to the battery power and warning prompts in DJI FlightHub 2.
- During Advanced RTH, the aircraft will enter Preset RTH if the lighting condition and environment becomes unsuitable for the vision systems. In this case, the aircraft cannot bypass the obstacles. An appropriate RTH altitude must be set before entering RTH.
- 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 in the Altitude Zones while the aircraft is outside, when the aircraft reaches Altitude Zones, it will fly below the altitude limit, which may be lower than the set RTH altitude. Fly with caution.
- The aircraft will bypass any GEO zones encountered when it is flying forward during Advanced RTH. Pay attention to flight safety during RTH.
- In rainy or foggy weather, the vision system is unavailable and the RTH route may be inaccurate, which can cause flight safety risks. DO NOT fly when it is rainy, foggy, or the visibility is lower than 100 m.

Dock Landing Detection

Dock landing detection is activated during auto landing and is executed as follows:

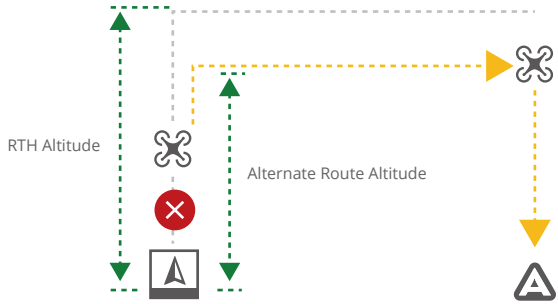
Landing Protection is enabled once the aircraft begins to land.

1. If dock landing detection determines the dock is suitable for landing, the aircraft will land on the dock directly.
2. If the dock is not suitable for landing (the dock cover fails to open, emergency stop button is pressed), the aircraft will fly to the alternate landing site. If an alternate landing site is not set, the aircraft will hover above the dock, and will start descending only when the battery level is low.
3. If the aircraft cannot detect the landing status of the dock (dock and aircraft disconnected), or the aircraft fails to land on the dock due to bad weather, the aircraft will descend below 5 m (9.8 ft) above the ground and hover. The aircraft will fly to the alternate landing site when the battery level is less than 20%. If an alternate landing site is not set, the aircraft will hover above the dock , and will start descending only when the battery level drops to 10%. Auto landing cannot be canceled and alternate landing cannot be triggered when the battery level drops to 7%.

⚠ • Make sure to set an alternate landing site during dock deployment. Otherwise, the aircraft may crash land if the dock is not suitable for landing, damaging the aircraft and the dock.

Alternate Landing

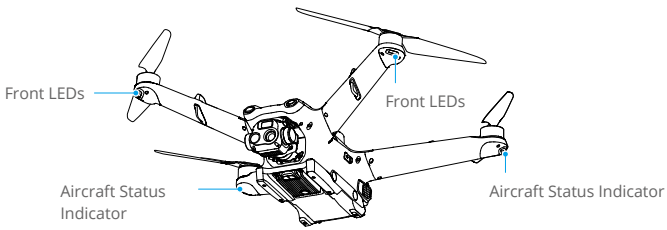
Dock Landing Detection will be triggered after the aircraft flies back to the dock during RTH. If the dock is determined unsuitable for landing, alternate landing will be triggered. The aircraft will ascend to the alternate route altitude, then fly to the alternate landing site for landing. Open DJI FlightHub 2, Click Devices > Dock > Device Maintenance to view Alternate Route Altitude.



⚠ • To ensure flight safety, make sure to set an alternate landing site and alternate route altitude during dock deployment

Aircraft Indicators

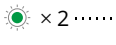
The aircraft has front LEDs and aircraft status indicators.



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 flight control system. Refer to the table below for more information about the aircraft status indicators.

Aircraft Status Indicators Descriptions

Normal States		
	Blinks red, yellow, and green alternately	Powering on and performing self-diagnostic tests
	Blinks yellow four times	Warming up
	Blinks green slowly *	GNSS enabled
	Blinks green twice repeatedly *	Vision systems enabled
	Blinks yellow slowly	GNSS and vision systems disabled (ATTI mode enabled)
Warning States		
	Blinks yellow quickly	Remote controller signal lost
	Blinks red slowly	Takeoff is disabled, e.g. low battery **
	Blinks red quickly	Critically low battery
	Solid Red	Critical error
	Blinks red and yellow alternately	Compass calibration required

* Blinks green slowly in N-mode and fast in S-mode.

** If the aircraft cannot takeoff while the rear indicator is blinking red slowly, open DJI FlightHub 2 Project Page and check the device status.

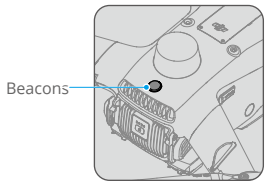
After the motor starts, the front LEDs blink red and green alternately and the rear LEDs blink green. The green lights indicate the aircraft is a UAV and the red lights indicate the heading and position of the aircraft.

⚠ • To obtain better footage, the front LEDs will turn off automatically when shooting by default settings. Front LED settings can be modified in DJI Pilot 2. Lighting requirements vary depending on the region. Observe local laws and regulations.

Beacons and Auxiliary Light

Beacons

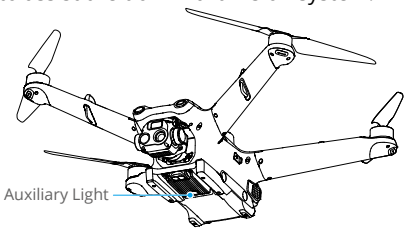
The upward and downward beacons on the aircraft allow users to find the aircraft when flying at night. The beacons can be enabled/disabled in DJI FlightHub 2 > Devices > Dock > Device Maintenance.



⚠ • DO NOT look directly at the beacon when it is in use to avoid eye damage.

Auxiliary Light

The auxiliary light is located at the bottom of the aircraft and will automatically turn on in low-light environments to assist the downward vision system.



- The auxiliary light will automatically turn on in low-light environments when the flight altitude is under 5 m. Note that the positioning performance of the vision systems may be affected. Fly with caution if the GNSS signal is weak. Pay attention to the dock and the aircraft livestream. Fly with caution.

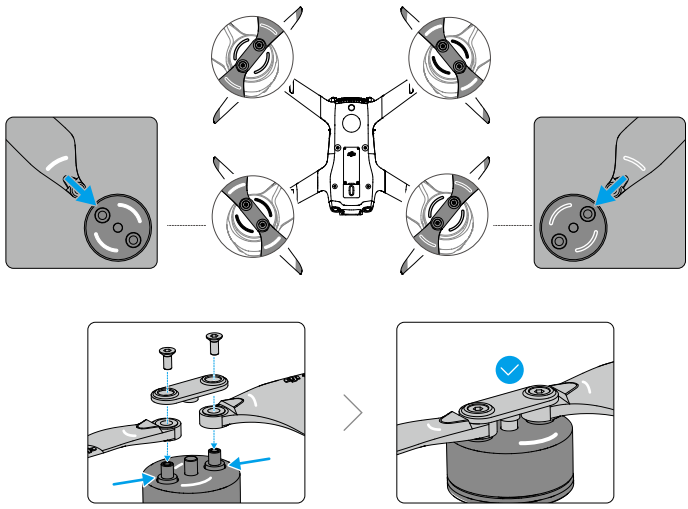
Propellers

There are two types of propellers, which are designed to spin in different directions. Marks are used to indicate which propellers should be attached to which motors. Make sure to match the propeller and motor following the instructions.

Replacing the Propellers

1. Match the marks on the motor and propeller, and install the propeller to the motor with the corresponding mark.
2. Use the 2.0mm hex key to replace the propellers for the DJI Matrice 3D Series aircraft. Make sure to tighten the screws and that the screw torque is greater than 5 kgf.cm. Make sure the washers are flat and not twisted.

- The propellers need to be replaced in pairs. Make sure to use the provided washers and screws when replacing the propellers. DO NOT reuse old washers or old screws.
- It is advised to only replace the propellers in the case of an emergency during outdoor operations. After the emergency flight is over, please contact DJI Support or an authorized dealer as soon as possible.



- Power off the aircraft before examining or replacing any propellers.
- The propeller blades are sharp. Handle with care.
- Only use official DJI propellers. DO NOT mix propeller types.
- Propellers are consumable components. Purchase additional propellers if necessary.
- Make sure that propellers are unfolded and firmly tightened before placing the aircraft on the dock.
- Make sure that all propellers are in good condition when placing the aircraft on the dock. DO NOT use aged, chipped, or broken propellers.
- Make sure the motors are mounted securely and rotating smoothly. Return the aircraft and immediately if a motor is stuck and unable to rotate freely.
- DO NOT attempt to modify the structure of the motors.
- 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.
- To avoid injury, stay away from rotating propellers or motors.
- DO NOT touch or let hands or body parts come in contact with the motors after flight, as they may be hot.
- Return to the dock and land the aircraft as soon as possible if a motor overload warning prompt appears in DJI FlightHub 2.
- Before taking off, the aircraft will slowly rotate the propellers to perform vision detection for propellers and check whether the propellers are in good condition. Wait for the detection to complete. To ensure flight safety, the aircraft will take off if no abnormal propeller is detected.

Flight Recorder

Flight data, including flight telemetry, aircraft status information, and other parameters, are automatically saved to the internal data recorder of the aircraft. The data can be accessed using DJI Assistant 2 (Enterprise Series).

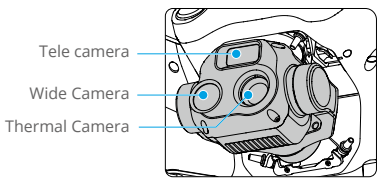
Camera

Camera Profile

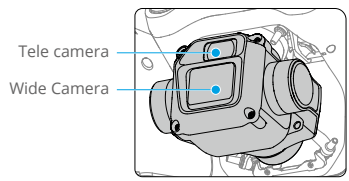
DJI Matrice 3D integrates a tele camera and a wide camera, which enable users to quickly switch to a highly magnified zoom view for detailed observation after recognizing a target in the wide-angle camera view and meet the needs for mapping operations. DJI Matrice 3TD is also equipped with a long-wave infrared thermal imaging camera, which can shoot thermal photo and meet the needs for security and inspection operations.

The zoom camera and the tele camera feature lens defogging. After powering on, the zoom camera will automatically heat the lens to dissipate the moisture on the lens.

The thermal camera features sunburn protection. When the camera detects direct sunlight, the infrared shutter will turn off automatically to protect the infrared sensors.



Matrice 3TD



Matrice 3D

Matrice 3D

The 4/3 CMOS, 20MP RGB wide camera has a mechanical shutter to prevent motion blur and supports rapid 0.7-second interval shooting. Large 3.3 μm pixels together with Smart Low-Light Photo, offer significantly improved photo quality in dim conditions.

The tele camera boasts a 1/2-in CMOS sensor, capable of shooting 48MP photos with an aperture of f/4.4 and shooting at 3 m to infinity, supporting up to 56× Max Hybrid Zoom.

DJI Matrice 3D features a tele camera and a wide camera with a mechanical shutter, meeting the needs for high-precision mapping tasks.

Matrice 3TD

The wide camera of Matrice 3TD boasts a 1/1.32-in CMOS sensor, capable of shooting 48MP photos with an aperture of f/1.7 and shooting at 1 m to infinity.

The tele camera boasts a 1/2-in CMOS sensor, capable of shooting 48MP photos with an aperture of f/4.4 and shooting at 3 m to infinity, supporting up to 56× Max Hybrid Zoom.

The thermal camera has 640 × 512 resolution and, together with the tele camera, supports 28 × continuous side-by-side zoom for easy comparisons.

⚠
- 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 within suitable ranges for the camera during use and storage.
- Use a lens cleanser 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 injure the user.

Camera Operation

Users can designate waypoint actions when planning flight routes in DJI FlightHub 2. The aircraft will automatically hover, adjust the gimbal tilt mode, photo-shooting, and video-recording according to the waypoint action during flight. Waypoints and waypoint actions can be edited in the FPV view to achieve more accurate flight route planning. Users can control the gimbal camera remotely after gaining gimbal camera control in DJI FlightHub 2. Go to the DJI FlightHub 2 User Guide and then refer to the Edit Waypoint Routes section for more information.

Aircraft Livestream

Aircraft livestreams can be activated in DJI FlightHub 2 to view real-time flight information. Users can switch to different camera views or start recording in the aircraft livestream view. The recorded video will automatically be stored to Media Files in DJI FlightHub 2. Refer to the Device Status Window section for more information.

Storing Media Files

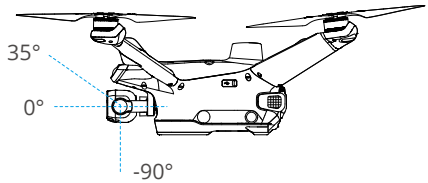
A microSD card is inserted when shipped. The aircraft supports microSD cards with a maximum capacity of up to 512 GB. To ensure that the camera can quickly read and write data for HD video recording, use a microSD card with UHS Speed Class 3 or above and a write speed greater than 30 MB/s. Refer to the Specifications section for more information about recommended microSD cards.

- DO NOT remove the microSD card from the aircraft when recording. 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.
- Photos and videos cannot be transmitted or copied from the camera if the aircraft is powered off.
- Make sure to power off the aircraft 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.
- The photos and videos will be automatically uploaded to DJI FlightHub 2 after each flight task. Open the DJI FlightHub 2 Project page and click > Media Files to view the uploaded files.
- To ensure the stability of the camera system, single video recordings are limited to 30 minutes. If the recording time exceeds 30 minutes, the video recording will stop.

Gimbal

Gimbal Profile

The 3-axis gimbal provides stabilization for the camera, allowing you to capture clear and stable images and video. The control tilt range is -90° to +35° .



Setting Gimbal Actions

The gimbal angle at each waypoint can be set in DJI FlightHub 2 when editing a flight route. The gimbal orientation can be adjusted remotely after gaining the gimbal camera control in DJI FlightHub 2. Go to the DJI FlightHub 2 User Guide and then refer to the Edit Waypoint Routes section for more information.

Gimbal Mode

The gimbal operates in Follow Mode: The tilt angle of the gimbal remains stable relative to the horizontal plane, which is suitable for shooting stable images. Users can adjust the gimbal tilt.

- 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.
- DO NOT add any extra payload to the gimbal as this may cause the gimbal to function abnormally or even lead to permanent motor damage.
- Avoid getting dust or sand on the gimbal, especially in the gimbal motors.
- A gimbal motor may enter protection mode in the following situations: a. The aircraft is on uneven ground, and the gimbal is obstructed. b. The gimbal experiences an excessive external force, such as during a collision.
- 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.

Aircraft RTK

The aircraft integrates an RTK module, when the aircraft is used with the internal RTK module of the dock, accurate positioning data can be obtained, allowing for a precise flight route and landing.

Users can choose different positioning accuracy when making task plans in DJI FlightHub 2:

- RTK: The aircraft will take off and wait for the RTK data to converge before performing a task. It is unable to pause the task during convergence. It is recommended to choose RTK when high positioning accuracy is required.
- GPS: The aircraft will perform a task directly without converging RTK data. It is recommended to choose GPS when basic positioning accuracy is acceptable. Make sure that there is no obstacles within 20 meters along the flight route before launching the task plan.

- The number of searched satellites should be greater than 20 for the aircraft RTK to converge. If there is strong signal interference or ionospheric scintillation, the aircraft RTK may not converge.
- The RTK positioning needs to be in an environment with good GNSS signal (outdoors in an open area without obstacles) to ensure high-precision positioning. The RTK solution is fixed to converge to centimeter-level accuracy.
- Make sure the dock RTK is calibrated before an RTK task to ensure accurate flight along the flight route.
- If the aircraft RTK type is switched (such as connect to the network RTK using the remote controller, and then link to the dock), make sure to restart the aircraft before performing flight tasks.

Expansion Ports

The aircraft is equipped with an E-Port, that allows access to third-party payloads such as loud speakers and spotlights. The E-Port lite can be used to connect parachute payloads. The dock reserves a space inside the cover for storing the third-party payload, which facilitates the expansion of the aircraft operating capabilities.

- To ensure flight safety, make sure to follow the Payload Development Criteria when developing PSDK payloads. Visit https://developer.dji.com/payload-sdk/ to view the documentation and the DJI Enterprise Ecosystem Solution Catalogue to learn more about the payload development criteria and the recommended payloads.
- The E-Port supports high power output and standard PSDK functions, while the E-Port Lite supports low power output of 5 V and PSDK parachute payloads.

Third-Party Payload Requirements

- Installing a third-party payload will shorten the fight time and reduce the aircraft wind resistance. Make sure to install the payload as needed.
- The third-party payload should have the protection ability of IP43 or above not to reduce the working stability or the service life of the aircraft.
- The cable connector of the third-party payload connecting to the aircraft should have a waterproof rubber ring.

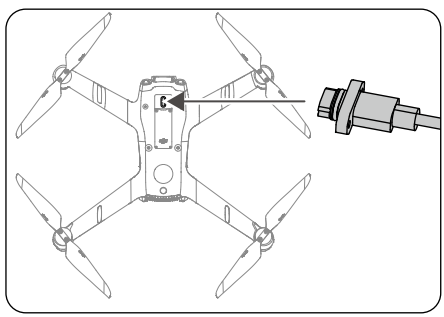
Installation Requirements

- The size of the reserved storage space inside the dock cover is 150 mm × 150 mm × 100 mm (length × width × height). /
- The height of the PSDK payload must not exceed 70 mm.
- After installing the payload, make sure that the third-party payload does not block the aircraft vision system to avoid affecting the obstacle-sensing performance.

Connection Requirements

The third-party payload is connected to the aircraft E-Port by inserting the connector with a waterproof rubber ring. If necessary, seal the E-Port of the aircraft.

⚠ • Make sure to seal the ports properly when connecting the payload to the aircraft. If any of the seals fail and water leaks into the aircraft, it will seriously affect flight safety.



IP Rating of the Aircraft

1. Under stable laboratory conditions, the DJI Matrice 3D Series aircraft achieves an IP54 protection rating by IEC 60529 standards when equipped with Intelligent Flight Batteries. The protection rating is not permanent and may lower over an extended period.
   - DO NOT fly when the amount of rainfall exceeds 24.9 mm in 24 hours.
   - Make sure the battery ports, battery compartment ports, battery surfaces, and battery compartment surfaces are dry before inserting the batteries.
   - The product warranty does not cover water damage.
2. The aircraft does not achieve an IP54 protection rating in the following circumstances:
   - Batteries other than the DJI Matrice 3D Series Intelligent Flight Battery are used.
   - The cover for the ports are not attached correctly.
   - The waterproofing top shell plug is not firmly attached to the top shell (loose shell plugs will affect the performance of the barometer).
   - The dongle compartment cover is not firmly secured.
   - The aircraft shell is cracked or the waterproof adhesive is aged or damaged.
3. The aircraft body is made of flame retardant materials to improve safety. As such, the body surface may become discolored after long-term use. However, such color change does not affect the performance and IP rating of the aircraft.

Intelligent Flight Battery

The Intelligent Flight Battery is equipped with high-energy battery cells and uses an advanced battery management system to power the aircraft. The firmware for the Intelligent Flight Battery is included in the aircraft firmware. Make sure the firmware of all intelligent flight batteries is updated to the latest firmware version.

Battery Features

1. Battery Level Display: The battery level LEDs display the current battery level.
2. Auto-Discharging Function: to prevent swelling, the battery automatically discharges to 96% of the battery level when it is idle for three days, and automatically discharges to 60% of the battery level when it is idle for nine days. It is normal to feel moderate heat being emitted from the battery during the discharging process.
3. Balanced Charging: During charging, the voltages of the battery cells are automatically balanced.
4. Overcharge Protection: The battery stops charging automatically once fully charged.
5. Temperature Detection: To prevent damage, the battery only charges when the temperature is between 10° and 44° C (50° and 111° F).
6. Overcurrent Protection: The battery stops charging if an excess current is detected.
7. Over-Discharge Protection: To ensure flight safety and allow users to have as much time as possible to deal with emergencies during flight, over-discharge protection is disabled to allow continuous output. The aircraft will intelligently determine whether to perform RTH or to land based on the current flight battery level. Charging an over-discharged battery may be a fire hazard. To prevent this, the battery will be locked and can no longer be charged or used.
8. Short Circuit Protection: The power supply is automatically cut if a short circuit is detected.
9. Battery Cell Damage Protection: The app will display a warning prompt when a damaged battery cell is detected.
10. Hibernation Mode: The battery will be in Hibernation mode when not inserted to the aircraft to save power.
11. Communication: Information about the voltage, capacity, and temperature of the battery is transmitted to the aircraft.
12. Warming up: The feature ensures the battery operates normally at a low temperature. Refer to the Warming the Battery section for more information.
13. Waterproofing and Dustproofing: After being installed in the aircraft, the battery meets the IP54 rating standards.

