Searching for Keywords

Search for keywords such as FOV and Mount 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.

Revision Log

<table>
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<tr>
<th>Version</th>
<th>Date</th>
<th>Revisions</th>
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</thead>
<tbody>
<tr>
<td>v1.2</td>
<td>2023.03</td>
<td>Updated with the dock firmware v01.02.0500. Added backup battery maintenance interval and optimized the descriptions of remote controller B and the RTH process. It is recommended to update the firmware to the latest version to ensure optimal device performance.</td>
</tr>
<tr>
<td>v1.4</td>
<td>2023.04</td>
<td>Updated with the dock firmware v01.03.0902. Optimized the battery maintenance strategy. DJI FlightHub 2 added support for live flight controls, resuming task from breakpoint, and email and message notifications.</td>
</tr>
<tr>
<td>v1.6</td>
<td>2023.09</td>
<td>Updated with the dock firmware v01.05.0902. Updated RTH to Advanced RTH, added support for DJI AirSense, and optimized the battery safety strategy. DJI FlightHub 2 added support for task area management, safe RTH, and camera and PSDK payload settings.</td>
</tr>
</tbody>
</table>
Using this Manual

Legend

⚠️ Important  🌟 Hints and Tips

Read Before Use

DJI™ provides users with tutorial videos and the following documents.

1. Safety Guidelines
2. Quick Installation Guide
3. Installation and Setup Manual

It is recommended to watch all tutorial videos and read the Safety Guidelines before using for the first time. Prepare for dock installation and first flight by reviewing the Quick Installation Guide. Refer to the Installation and Setup Manual and this user manual for more information.

⚠️ • DJI Dock must be installed and set up by an authorized service provider. Unauthorized installation and set up may lead to safety risks. Contact DJI Support for more information on authorized service providers.

Download DJI Assistant 2

Download and install DJI ASSISTANT™ 2 (Enterprise Series) using the link below:
https://www.dji.com/dock/downloads

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.

⚠️ • The operating temperature of DJI Dock is -35° to 50° C (-31° to 122° F)*, while that of the aircraft is -20° to 50° C (-4° to 122° F). Both products DO NOT meet the standard operating temperature for military grade application of -55° to 125° C (-67° to 257° F), which is required to endure greater environmental variability. Operate the products appropriately and only for applications that meet the operating temperature range requirements of that grade.

* When the temperature is below -20° C (-4° F), the aircraft cannot perform flight tasks and the dock cover and the driving rods cannot be controlled automatically.
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Product Profile

This chapter introduces the Dock Bundle and lists the components of the dock and the aircraft.
Product Profile

Introduction

DJI™ Dock is an automatic unattended operation platform with highly integrated design, including an ultra wide-angle camera, wind speed gauge, rainfall gauge, communication antennas, RTK module, and UPS power supply. DJI Dock has strong environmental adaptability. With built-in lightning protection and a protection level of IP55 (refer to IEC 60529 standard), DJI Dock can operate even in harsh climates. The longest maintenance interval is six months \[^1\]. DJI Dock comes with a quick-charging module and TEC air conditioner, allowing it to cool down the battery in a short time. It takes approximately 25 minutes \[^2\] to charge the battery from 10% to 90%. And the operating radius is up to 7 km. \[^3\]

One DJI Dock weighs less than 105 kg and has a dimension smaller than 1 square-meter footprint, and supports quick installation and configuration.

DJI MATRICE™ 30 Series (M30/M30T) Dock Version is equipped with a multi-redundancy flight controller system, six-directional sensing and positioning system \[^4\], high-performance multi-camera load, and a new FPV camera with night vision, providing Return to Home and obstacle sensing. The aircraft has a maximum flight time of approximately 40 minutes. \[^5\]

DJI FlightHub 2 is a cloud-based aircraft task management platform, allowing users to plan flight routes, set flight task plans, view livestreams, upload and download media files, and conduct remote debugging. It can also work with DJI Dock and Matrice 30 Series Dock Version aircraft to perform unattended operations, achieving efficient flight task and device management.

\[^1\] Depending on environmental conditions and the frequency of DJI Dock operations, it is recommended that maintenance be conducted every six months or less.

\[^2\] Measured at a temperature of 25° C (77° F). As the temperature increases, the battery cooling time will increase and lengthen downtime.

\[^3\] Measured in environments without transmission or signal interference, and wind speeds <4 m/s, where the aircraft has a flight speed of 15 m/s and reserves 20% battery as a safety buffer for landing.

\[^4\] The vision system and infrared sensing systems are affected by surrounding conditions. Refer to the Vision System and Infrared Sensing System section for more information.

\[^5\] Measured in windless environment with a constant flight speed of 10 m/s, and should be used for reference only. The actual use time may vary depending on the environment, flight mode, and the use of accessories.
Feature Highlights

Automated Operation: The powerful adaptability allows DJI Dock to operate in harsh environments. DJI Dock can work with the Matrice 30 Series Dock Version aircraft to perform automatic flight tasks, battery charging and management, temperature and humidity control, achieving unattended operations.

Precise Positioning and Flight: The internal RTK module of DJI Dock can receive a dual-band multi-mode GNSS signal, providing high-precision data for centimeter-level positioning. Precise flight and landing can be achieved when used with the Matrice 30 Series Dock Version aircraft. [1]

Video Transmission: Matrice 30 Series Dock Version aircraft features long-range transmission O3 Enterprise (OCUSYNC™ 3.0 Enterprise) technology, providing users with improved transmission quality and ensure safer flight in complex environments.

Cloud Management: DJI FlightHub 2 supports flight task planning and device management of the dock. Users can set flight task plans based on actual needs. The aircraft will automatically takeoff according to the preset task plans, and the media files will be automatically uploaded to DJI FlightHub 2. During the operation, livestreams and real-time device information can be viewed remotely to monitor the operation site. Users can also view the operation status of the dock and aircraft and conduct remote debugging, making device management more convenient. [2]

[1] The dock coordinates need to be calibrated to obtain accurate absolute position when configuring the dock.

Overview

DJI Dock

1. Status Indicators
2. Internal Video Transmission Antennas
3. Dock Cover Arms
4. Matrice 30 Series Dock Version
5. Landing Pad Bolts
6. Wind Speed Gauge
7. Integrated Security Camera
8. Camera Auxiliary Light
9. Rainfall Gauge
10. Dock Cover Propeller Bumpers
11. Emergency Stop Button
12. Electrical Cabinet Triangular Lock
13. Mounting Base Brackets
Matrice 30 Series Dock Version

1. FPV Camera
2. Forward Infrared Sensing System
3. Forward Vision System
4. Left and Right Vision Systems
5. Left and Right Infrared Sensing Systems
6. microSD Card Slot
7. Upward Vision System
8. Upward Infrared Sensing System
9. Power Button/Indicator
10. PSDK Port
11. Upward Beacon
12. Assistant Port
13. Frame Arm Folding Buttons
14. Frame Arms
15. Motors
16. Propellers
17. Aircraft Rear Indicators
18. GNSS Antennas
19. Video Transmission Antennas
20. Front LEDs
22. Charging Ports

[1] The M30 and M30T are equipped with different cameras. Refer to the actual product purchased.
23. Backward Vision System
24. Backward Infrared Sensing System
25. Air Vent
26. TB30 Intelligent Flight Battery
27. Battery Level LEDs
28. Battery Level Button
29. Battery Release Toggle
30. Downward Vision System
31. Downward Infrared Sensing System
32. Bottom Auxiliary Light
33. Downward Beacon

⚠️ DO NOT disassemble the product without the assistance of a DJI authorized dealer (except for components allowed to be disassembled by users in this guide), otherwise it will not be covered under warranty.

**DJI RC Plus Remote Controller**
DJI RC Plus remote controller can be used for dock configuration and debugging. The remote controller can also link to the aircraft as controller B for manual flight control. Refer to the Remote Controller B section for more information.
Flight Procedure

The operating procedure in FlightHub 2 and the automated flight procedure of the dock and the aircraft is shown in the figure:

• For more information, refer to the DJI FlightHub 2 User Guide which is available to download from the official DJI website https://www.dji.com/flighthub-2/downloads.
Flight Safety

This chapter provides information about compliance with regulations, flight environment and wireless communication requirements, and introduces the control of remote controller B and flight test checklist.
Flight Safety

Compliance with Regulations

1. DO NOT operate in the vicinity of manned aircraft. DO NOT interfere with the operations of manned aircraft. Be alert and make sure there is no other aircraft in the operation area.

2. DO NOT fly the aircraft in venues of major events, including but not limited to sporting events and concerts.

3. DO NOT fly the aircraft without authorization in areas prohibited by local laws. Prohibited areas include airports, national borders, major cities and densely populated areas, venues of major events, areas where emergencies have occurred (such as forest fires), and locations with sensitive structures (such as nuclear power plants, power stations, hydropower plants, correctional facilities, heavily traveled roads, government facilities, and military zones).

4. DO NOT fly the aircraft above the authorized altitude. DO NOT use the aircraft to carry illegal or dangerous goods or payloads.

5. Make sure you understand the nature of your flight operation (such as for recreation, for public use, or for commercial use) and have obtained corresponding approval and clearance from the related government agencies before flight. Consult with your local regulators for comprehensive definitions and specific requirements. Note that remote-controlled aircraft may be banned from conducting commercial activities in certain countries and regions. Check and follow all local laws and ordinances before flying, as those rules may differ from those stated here.

6. Respect the privacy of others when using the camera. DO NOT conduct surveillance operations, such as image capture or video recording on any person, entity, event, performance, exhibition, or property without authorization or where there is an expectation of privacy, even if the image or video is captured for personal use.

7. Be advised that in certain areas, the recording of images and videos from events, performances, exhibitions, or commercial properties by means of a camera may contravene copyright or other legal rights, even if the image or video was shot for personal use.

8. DO NOT use this product for any illegal or inappropriate purpose, such as spying, military operations, or unauthorized investigations. DO NOT trespass onto the private property of others. DO NOT use this product to defame, abuse, harass, stalk, threaten, or otherwise violate the legal rights of others, such as privacy and publicity rights.
Environment and Wireless Communications Requirements

1. DO NOT fly the aircraft in severe weather conditions, including strong winds (speeds exceeding 12 m/s), sandstorms, snow, rain heavier than 100 mm (3.9 in) in 24 hours, smog, hail, lightning, tornadoes, or hurricanes.

2. Avoid obstacles, crowds, trees, and bodies of water (recommended height is at least 3 m above water).

3. Be extremely alert when flying near areas with magnetic or radio interference. It is recommended to set the remote controller as controller B during flight tests. Pay close attention to the video transmission quality and signal strength on DJI Pilot 2. Sources of electromagnetic interference include but are not limited to: high voltage lines, large-scale power transmission stations or mobile base stations, and broadcasting towers. The aircraft may behave abnormally or lose control when flying in areas with too much interference. Return to the dock and land the aircraft, and make future task plans until the flight test is stable.

4. Fly in wide open areas. Tall buildings, steel structures, mountains, rocks, or tall trees may affect the accuracy of the GNSS and block the video transmission signal.

5. Avoid interference between the dock and other wireless equipment. It is recommended to power off nearby Wi-Fi and Bluetooth devices.

6. The performance of the aircraft and its batteries are limited when flying at high altitudes. Fly with caution.

7. DO NOT use the aircraft or the dock in an environment at risk of a fire or explosion.

8. Only operate the dock and the aircraft only for applications in the operating temperature range. The operating temperature of DJI Dock is -35° to 50° C (-31° to 122° F), and the operating temperature of the aircraft is -20° to 50° C (-4° to 122° F). In low-temperature environments, it is necessary to check whether the dock cover and the aircraft is covered with snow and ice, and whether the propellers are frozen using the dock camera livestreams.

9. Make sure to set an alternate landing site before flight. The aircraft will fly to the alternate landing site when the dock’s conditions are not suitable for landing. Follow the instructions in DJI Pilot 2 to set an alternate landing site when configuring the dock. An obvious sign should be set up near the alternate landing site. Make sure that the area within the five-meter radius of the alternate landing site is clear of obstacles.

* When the temperature is below -20° C (-4° F), the aircraft cannot perform flight tasks and the dock cover and the driving rods cannot be controlled automatically.
Flight Restrictions and Unlocking

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 flight. Prior to that, the user must submit an unlocking request based on the current restriction level in the intended flight area. The GEO system may not fully comply with local laws and regulations. Users shall be responsible for their own flight safety and must consult with the local authorities on the relevant legal and regulatory requirements before requesting to unlock a flight in a restricted area.

GEO Zones

DJI's 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. GEO Zones include but are not limited to airports, venues of major events, areas where emergencies have occurred (such as forest fires), nuclear power plants, correctional facilities, government facilities, and military zones. Users can view real-time GEO information in DJI FlightHub 2.

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.

The settings and alerts provided by DJI on operations within GEO Zones are only to assist the user in ensuring flight safety and DO NOT guarantee full compliance with all local laws and regulations. Before each flight task, the user is responsible for seeking advice on the relevant local laws, regulations, and requirements for the safety of their own aircraft.

Flight Restrictions in GEO Zones

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

<table>
<thead>
<tr>
<th>GEO Zone</th>
<th>Flight Restriction</th>
<th>Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restricted Zones (Red)</td>
<td>UAVs are prohibited from flying in Restricted Zones. If you have obtained permission to fly in a Restricted Zone, please visit <a href="https://fly-safe.dji.com/unlock">https://fly-safe.dji.com/unlock</a> or contact <a href="mailto:flysafe@dji.com">flysafe@dji.com</a> to unlock the zone.</td>
<td>The aircraft cannot take off, and a prompt will appear in DJI FlightHub 2 when the flight route passes through the Restricted Zones.</td>
</tr>
</tbody>
</table>
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.  The aircraft cannot take off, and a prompt will appear in DJI FlightHub 2 when the flight route passes through the Authorization Zones. To fly in an Authorization Zone, the user is required to submit an unlocking license request and synchronize the license to the dock in DJI Pilot 2 app.

Warning Zones (Yellow)  Enhanced Warning Zones (Orange)  The aircraft can fly in the zone.  The aircraft can fly in the zone. Please view GEO information in DJI FlightHub 2 and stay alert.

Altitude Zones (Gray)  The aircraft’s altitude is limited when flying inside an Altitude Zone.  The aircraft cannot take off, and a prompt will appear in DJI FlightHub 2 when the planned flight altitude exceeds the maximum altitude of the aircraft.

⚠️ When creating a flight task in Task Plan Library, make sure that the selected flight route does not pass through any GEO zones, and that the RTH altitude and flight route altitude is at least 5 m below the altitude limit. It is recommended that the flight route keeps a horizontal distance of at least 20 m from the GEO zone.

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 away from the Restricted or Authorization Zone when inside the buffer zone. The aircraft 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.
Unlocking GEO Zones

To satisfy the needs of different users, DJI provides two unlocking modes: self-Unlocking and Custom Unlocking. Users may request on the DJI Fly Safe website.

**Self-Unlocking** is intended for unlocking Authorization Zones. To complete Self-Unlocking, the user is required to submit an unlocking request via the DJI Fly Safe website at https://fly-safe.dji.com/unlock. Once the unlocking request is approved, the user may synchronize the unlocking license to the dock using the DJI Pilot 2 app to unlock the zone. The user can designate an unlocked period during which multiple flights can be operated.

**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 Fly Safe website at https://fly-safe.dji.com/unlock.

For more information about unlocking, please visit https://fly-safe.dji.com or contact flysafe@dji.com.
Maximum Altitude & Distance Restrictions

Maximum flight altitude restricts the aircraft flight altitude, while maximum flight distance restricts the aircraft flight radius around the dock. These limits can be set using the DJI FlightHub 2 for improved flight safety. The maximum flight altitude is 120 m (393.7 ft) by default. Fly at altitudes lower than the maximum altitude in accordance with all local laws and regulations.*

* Flight altitude restrictions vary in different regions. DO NOT fly above the maximum altitude set forth in your local laws and regulations.

<table>
<thead>
<tr>
<th>Flight Restrictions</th>
<th>DJI FlightHub 2 Prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Altitude</td>
<td>Altitude of the aircraft cannot exceed the value set in DJI FlightHub 2.</td>
</tr>
<tr>
<td></td>
<td>Flight route altitude exceeds maximum altitude, the dock is unable to perform flight task.</td>
</tr>
<tr>
<td>Max Distance</td>
<td>The straight-line distance from the aircraft to the Home Point cannot exceed the max flight distance set in DJI FlightHub 2.</td>
</tr>
<tr>
<td></td>
<td>Flight route distance exceeds maximum distance, the dock is unable to perform flight task.</td>
</tr>
</tbody>
</table>

⚠️ • The aircraft cannot take off when the GNSS signal is weak.  
• DO NOT fly the aircraft close to airports, highways, railway stations, railway lines, city centers, or other sensitive areas.
**DJI AirSense**

Manned airplanes or helicopters with Automatic Dependent Surveillance–Broadcast (ADS-B) transmitters can broadcast flight information. The DJI aircraft equipped with DJI AirSense can receive the flight information broadcast from ADS-B transmitters that comply with the 1090ES (RTCA DO-260) or UAT (RTCA DO-282) standard and within a radius range of 10 km. DJI AirSense only issues warning messages under certain circumstances when specific manned airplanes or helicopters are approaching and is not able to actively control or take over the DJI aircraft to avoid collisions. Users should always fly the aircraft within the visual line of sight and be cautious at all times to ensure flight safety. DJI AirSense has the following limitations:

1. DJI AirSense can only receive messages broadcast by manned airplanes or helicopters installed with an ADS-B Out device that is in compliance with the 1090ES or UAT standard. DJI AirSense cannot receive messages from manned airplanes or helicopters that are not equipped with ADS-B Out devices or equipped with devices that are not functioning properly.

2. DJI AirSense uses satellite and radio signals to receive ADS-B messages. If there is an obstacle between a manned airplane or helicopter and a DJI aircraft, DJI AirSense may not be able to receive broadcast and issue warning messages.

3. Warning messages may be sent with delays if DJI AirSense experiences any interference from the surrounding environment. Users need to observe the surrounding environment and fly with caution.

4. Warning messages may not be accurate when the DJI aircraft is unable to obtain its location information.

5. DJI AirSense cannot receive broadcast from manned airplanes or helicopters, nor send warning messages to FlightHub 2 users when DJI AirSense is disabled or not properly functioning.

DJI FlightHub 2 collects all the DJI AirSense data reported by the dock aircraft in the project and displays the location of an approaching manned airplane or helicopter, as well as a warning message on the web page when there is a potential risk of collision. DJI AirSense can obtain and analyze the location, altitude, orientation, and velocity of the manned airplane or helicopter and compare the information with the current location, altitude, orientation, and velocity of the dock aircraft to evaluate the collision risk in real time. Users can click 🛩 in the lower right corner of the map to decide whether to display the low and medium collision risk warnings on the map.
• Warning (high collision risk): A red airplane icon will appear on the map, and the web page will display the message stating, "Manned aircraft nearby. Take over aircraft promptly to avoid". FlightHub 2 users can click the dock name to open the device status window and obtain the aircraft control to avoid collisions.

• Caution (medium collision risk): A yellow airplane icon will appear on the map when a manned airplane or helicopter is relatively near the dock aircraft.

• Normal (low collision risk): A blue airplane icon will appear on the map when the manned airplane or helicopter is relatively far away from the dock aircraft.

Remote Controller B

DJI RC Plus remote controller can be linked to the aircraft as controller B. During on-site flight tests, the remote controller can take over control and manually control flight. After the remote controller gains control, press and hold the RTH button on the remote controller, and the aircraft will return to the dock.

Linking Remote Controller B

The dock is already linked to the aircraft when it is purchased together in the Dock Bundle. Link the remote controller to the aircraft as controller B following the steps below:

1. Power on the remote controller and the aircraft.
2. Run DJI Pilot 2, tap Controller A > Switch to Controller B.
3. Press and hold the power button on the aircraft for at least five seconds.
4. When linking is successful, the remote controller will beep twice.

Gaining Control Using Remote Controller B

1. To gain control of the aircraft, press the aircraft control button 🚀 on the upper-left of the remote controller; and then press the orange Pause button on the upper-right to control flight manually.
2. To gain control of the gimbal camera, tap Ⓟ on the upper right corner of the gimbal camera view in DJI Pilot 2.

⚠️ • Make sure to link the dock to the aircraft first, and then link remote controller B.
• The remote controller is not included in the Matrice 30 Series Dock Bundle. Pay attention to flight safety when manually controlling with the remote controller. Visit https://www.dji.com/cn/matrice-30/downloads, carefully read, understand, and follow the instructions in the disclaimer and safety guidelines and the user manual.
• DO NOT update the Home Point after gaining control. Otherwise the aircraft cannot return to the dock.
Control of the Dock and the Remote Controller

1. Control over the aircraft is independent of control over the gimbal camera. The control sticks are used for operating the gimbal if the remote controller only has control over the gimbal camera. When the remote controller has full control, the control sticks are used for controlling the aircraft and the dials for adjusting gimbal movement.

2. By default, the dock connected to the aircraft is granted control of both the aircraft and the gimbal camera, while the remote controller is not given any control.

3. Only the remote controller with aircraft control can be used to start or cancel RTH. Only the remote controller with control of the gimbal camera can be used to adjust relevant settings for the gimbal and camera and to download or replay media files.

4. The dock will automatically take control of the aircraft before each flight task. A control transfer mechanism will be triggered if either the dock or the remote controller is disconnected from the aircraft. When this happens, control will shift to the one that still connected with the aircraft. If the dock disconnects from the aircraft, the remote controller will receive a notification that the user may manually take over aircraft control. If the pilot of the remote controller chooses not to take over aircraft control, the aircraft will automatically perform the signal lost action. If the pilot of the connected remote controller does not choose either option within a specified time period, the aircraft will also activate the signal lost action.

5. If the disconnected remote controller reconnects with the aircraft during the flight, it will not resume its previous control and will by default have no control of any device.

6. RTH cannot be triggered in DJI FlightHub 2 after remote controller B gains control. The dock will automatically gain control over the aircraft if remote controller B is disconnected from the aircraft (such as when the remote controller is powered off or the video transmission signal is lost). The aircraft can continue the flight task in progress.

7. During a flight task, if the remote controller gains control under N mode, the aircraft will continue the flight task. If the flight mode is switched to another mode, the flight task will be interrupted and RTH will be triggered. If the remote controller gains control in another flight mode, the flight task will be interrupted and RTH will be triggered.

8. The remote controller can be used to modify the flight control system, the sensing system and other aircraft settings. Refer to the Aircraft Settings Using the Remote Controller section for more information.

9. Both the firmware of the dock and the aircraft can be updated in DJI FlightHub 2, but the remote controller can only be used to update the firmware of the remote controller.
10. Users can upload the logs of both the dock and the aircraft in DJI FlightHub 2, and can upload the logs of remote controller using the remote controller.

11. Remote controller B cannot be used to update the Fly Safe database.

**Flight Test Checklist**

After adding new flight route or changing flight route settings, it is recommended to perform on-site flight test to ensure normal dock operation.

**On-site Checklist**

- Make sure there is no foreign object in the battery ports of the aircraft.
- Make sure the TB30 batteries are installed firmly, and the battery release toggles are locked.
- Make sure the propellers are firmly mounted and not damaged or deformed, that there are no foreign objects in or on the motors or propellers, that the propeller blades and arms are unfolded, and that the frame arm folding buttons are popped out in the locked position.
- Make sure the lenses of the vision systems, FPV, gimbal cameras, the glass of the infrared sensors, and the auxiliary lights are clean and not blocked in any way.
- Make sure the gimbal is unlocked and the camera is facing the front of the aircraft.
- Make sure the covers of the microSD card slot, the assistant and the PSDK port have been closed properly.
- Make sure that the wind speed gauge rotates properly and that the rainfall gauge surface is clear of dirt or foreign objects.
- Make sure the landing pad surface is clean and clear of obstacles.
- Make sure the Emergency Stop Buttons are released.
- Modify the aircraft settings using the remote controller (excluded) based on actual needs. Check the settings of the obstacle braking distance, warning distance, gimbal camera settings, and aircraft RTK Maintain Positioning Accuracy mode in the DJI Pilot 2 App. Refer to the Aircraft Settings Using Remote Controller section for more information.

**DJI FlightHub 2 Checklist**

- Open the DJI FlightHub 2 Project page, click 🔄 > 📈 and check the following:
  a. Make sure the dock status is Idle, and the aircraft status is Standby or Powering Off.
  b. Make sure the wind speed, ambient temperature, and rainfall are within the reasonable range, and that the dock network connection is stable.
  c. Click Live to open dock livestream. Make sure the dock cover surface is clear of obstacles and snow or ice.
d. Click Action to check device status. Make sure the dock RTK is calibrated and the RTK data is converged, the satellite signal is good, and that the device storage has enough free space.

e. Make sure to enable the obstacle sensing of the aircraft. Make sure to turn on the beacons of the aircraft at night. Make sure to set a maximum altitude, maximum distance, and alternate route altitude based on actual flight conditions.

- Make sure the dock and aircraft firmware have been updated to the latest version in the Devices page.
- Make sure that an alternate landing site is set.
- Check the following flight route settings:
  a. Make sure that the flight route does not pass through any GEO zones, and that the flight route keep a horizontal distance of at least 20 m from the GEO zone.
  b. Check the takeoff point, altitude mode, and flight altitude. When flying near a GEO zone, it is recommended to set the flight altitude at least 5 m lower than the altitude limit of the GEO zone.

- When creating a task plan, make sure to set an RTH altitude at least 5 m lower than the altitude limit of the GEO zone.
- Pay attention to the flight altitude, flight speed, battery level and other flight parameters during the flight test.
- Divide the airspace for flight when multiple aircraft are operating simultaneously in order to avoid collision mid-air.

⚠️  • It is recommended to link the remote controller as controller B before flight tests for safety reasons.
  • To ensure flight precision, when importing flight routes to DJI FlightHub 2, make sure the RTK signal source of the flight route is the same as the signal source used to calibrate the dock RTK. Otherwise, the actual flight trajectory of the aircraft differs from the preset flight route, and may even cause the aircraft to crash.

💡  • After a task plan is launched, the dock will automatically check whether the environment (such as wind speed, rainfall and ambient temperature) is suitable for flight tasks. To ensure flight safety, the aircraft cannot take off in the following conditions:
  a. Wind speed is above 12 m/s.
  b. In heavy rainfall.
  c. Environment temperature is below -20° C (-4° F).
  d. One of the Emergency Stop Buttons is pressed.
  e. The dock power supply is powered off.
  f. The Intelligent Flight Battery level is below 30%.
g. The aircraft RTK is disabled.

h. The aircraft satellite signal is weak (the aircraft satellite icon in DJI FlightHub 2 is red).

i. The dock cannot perform Continuous or Timed tasks if the battery cycle count exceeds 500 cycles.

- If a warning message appears in DJI FlightHub 2, click the message to view warning details, and follow the instructions to conduct remote debugging.
- If the wind speed is close to 12 m/s, try lowering the flight altitude and the RTH altitude to reduce the effect of the strong wind. Meanwhile, check the flight altitude and the RTH altitude to ensure the flight path and the RTH path is free of any obstacles.
Dock

This chapter introduces the major features of the dock.
Dock

DJI Dock mainly consists of the electrical cabinet, dock cover, environment sensors, landing pad, RTK module, communication system, air conditioning system, and UPS module. A detailed introduction to the dock components and functions will be provided in this chapter.

Electrical Cabinet

The Electrical Cabinet has an AC Power Switch, Backup Battery Switch, Grounding Terminals, Surge Protective Devices (SPD), and operation ports.

The Electrical Cabinet can be connected to external cables for dock grounding, power supply, and wired network connection. The dock can be connected to the remote controller via the USB-C port on the electrical cabinet or to a computer via the USB-A port for on-site operations.

Opening the Electrical Cabinet

1. Insert the triangular key and rotate counterclockwise to open the electrical cabinet door.
2. Use a hex key to loosen the screws and remove the metal plate.

⚠️ • The electrical cabinet should be operated by a qualified professional. Make sure to power off the dock before operating the terminals. Pay attention to safety during operation in order to avoid an electric shock.
• DO NOT press the cabinet door or place any heavy objects on it.
Panel Description

- The red color indicates the area above safety voltage while the blue color indicates the area under safety voltage. Pay attention when operating in the area above safety voltage in order to avoid electric shocks.

<table>
<thead>
<tr>
<th>Overview</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Grounding Terminals</td>
<td>Connect the dock to earth electrodes.</td>
</tr>
<tr>
<td>2. AC Power Input</td>
<td>Connect to external AC Power (100-240 V). The three terminals are PE (protective earth), N (neutral), and L (live), respectively. <strong>DO NOT touch the Terminals in order to avoid an electric shock.</strong></td>
</tr>
<tr>
<td>3. SPD for AC Power</td>
<td>Protect electrical devices of the dock from lightning, overvoltage, and surge damage.</td>
</tr>
<tr>
<td>4. Surge Protector Circuit Breaker (SCB)</td>
<td>Protect the SPD for AC Power and conduct leakage protection to avoid risk of fire.</td>
</tr>
<tr>
<td>5. AC Power Switch</td>
<td>Power on/off the dock.</td>
</tr>
<tr>
<td>6. AC Power Output</td>
<td>Connect to user equipment for power supply (Max. power should be less than 240 W).</td>
</tr>
<tr>
<td>7. Backup Battery Switch</td>
<td>Turn on/off the backup battery of the dock.</td>
</tr>
<tr>
<td>8. Electrical Cabinet Indicators</td>
<td>Indicate the working status of the power supply, the backup battery, the wired network and the wireless network.</td>
</tr>
</tbody>
</table>
9. **USB-A Port**  
   Connect the remote controller to the dock for dock configuration and set up.

10. **Dock Cover Manual Release Button**  
    Press to unlock the dock cover for manual control.

11. **USB-C Port**  
    Connect to a computer to access DJI Assistant 2.

12. **Ethernet Port**  
    Connect to ethernet for wired network access.

13. **SPD for Ethernet Device**  
    Protect the dock ethernet devices from damage by lightning overvoltage.

14. **Magnetic Door Sensor**  
    Detect whether the electrical cabinet door is closed.

15. **Power Port for Emergency Unlocking**  
    Connect to external power supply* to unlock the dock cover when the dock is powered off or failure occurs.

* It is recommended to use the standard chargers of Matrice 200 Series, Inspire 2, or Phantom 4 Series.

### Electrical cabinet Status Indicators

<table>
<thead>
<tr>
<th>Status Indicator</th>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Indicator</td>
<td><img src="status_icon_red.png" alt="Red" /></td>
<td>AC power supply is normal.</td>
</tr>
<tr>
<td></td>
<td><img src="status_icon_off.png" alt="Red" /></td>
<td>No AC power supply.</td>
</tr>
<tr>
<td>Backup Battery Indicator</td>
<td><img src="status_icon_blue.png" alt="Blue" /></td>
<td>Backup battery is fully charged or is supplying power to the dock.</td>
</tr>
<tr>
<td></td>
<td><img src="status_icon_blink.png" alt="Blue" /></td>
<td>Backup battery is charging.</td>
</tr>
<tr>
<td>Wired Network Indicator</td>
<td><img src="status_icon_green.png" alt="Green" /></td>
<td>Ethernet is connected and has data transmission with the dock.</td>
</tr>
<tr>
<td></td>
<td><img src="status_icon_off.png" alt="Green" /></td>
<td>Ethernet is disconnected.</td>
</tr>
<tr>
<td>4G Network Indicator</td>
<td><img src="status_icon_green.png" alt="Green" /></td>
<td>4G network is connected and has data transmission.</td>
</tr>
<tr>
<td></td>
<td><img src="status_icon_off.png" alt="Green" /></td>
<td>4G network is disconnected.</td>
</tr>
</tbody>
</table>
Dock Cover

The internal video transmission antennas and status indicators are located on the dock cover. The dock cover propeller bumpers on the side edges of the dock cover are used for folding the aircraft propellers when closing the dock cover.

The heating strips at the dock cover seam can automatically heat the dock cover to prevent the seam from freezing.

⚠️ • Make sure the internal video transmission antennas are not blocked by snow, ice, or any foreign objects.
 • The dock cover heating strips can only prevent the dock cover seam from freezing. Make sure to clean the snow or ice covered on the surface.
 • The Dock Cover Propeller Bumpers are easily-worn parts, replace them if necessary.

Opening and Closing the Dock Cover

When conducting remote debugging, the dock cover can be opened or closed using DJI FlightHub 2 or the DJI Pilot 2 app to check the aircraft status and the component status inside the dock. The dock cover can also be controlled manually. Make sure the emergency stop buttons are released before opening the dock cover. If not, pull out or rotate clockwise to release the emergency stop buttons.

⚠️ • Keep a safe distance from the dock cover to avoid injury when opening or closing the dock cover. Press the emergency stop button if necessary.
 • DO NOT press or place heavy objects on the dock cover after it is opened.

Using DJI FlightHub 2

Open DJI FlightHub 2 Project page, click ☑️ > ■️ > Action, and enable Remote Debugging; or open Devices page, click Dock > ☑️ > Device Maintenance, and enable Remote Debugging to open or close the dock cover.

If the dock cannot detect the aircraft, check whether the aircraft is on the landing pad using the dock livestream, and follow the instructions prompted in DJI FlightHub 2. Click Force Close Dock Cover if the aircraft is not on the landing pad. Click Close Dock Cover if the aircraft is on the landing pad.

⚠️ • DO NOT click Force Close Dock Cover if the aircraft is on the landing pad. Otherwise, the propellers and the dock cover may be damaged.

💡 • When closing the dock cover, the aircraft will automatically power on, and the propellers will slowly rotate to avoid damage to the propellers.
Using DJI Pilot 2
Connect the remote controller to the dock. Run DJI Pilot 2 and tap Open Dock Cover.

Manual Control
1. Make sure the dock is powered on, and the dock cover status indicators are blinking.
2. Open the electrical cabinet door using the triangular key.
3. Press and hold the manual release button, then lift and rotate the connection between the cover arm and the cover to open the dock covers. Make sure to control the descent speed to prevent the cover from falling.
4. Before closing the dock cover manually, to avoid breaking the propellers, rotate the propellers to the landing pad and make them as 90°.
Dock Cover Status Indicators and Buzzer Alerts

### Normal States

<table>
<thead>
<tr>
<th>Status</th>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blinks white</td>
<td></td>
<td>The dock is working normally and the aircraft is ready to take off.</td>
</tr>
<tr>
<td>Blinks blue</td>
<td>Short beeps</td>
<td>The dock and the aircraft are linking.</td>
</tr>
<tr>
<td>Blinks green</td>
<td></td>
<td>The aircraft has taken off from the dock and is performing a flight task.</td>
</tr>
<tr>
<td>Solid blue</td>
<td></td>
<td>The dock is updating or debugging (including remote debugging and on-site debugging).</td>
</tr>
</tbody>
</table>

### Warning States

<table>
<thead>
<tr>
<th>Status</th>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blinks red</td>
<td>Long beeps</td>
<td>The dock covers are moving or the aircraft is taking off or landing.</td>
</tr>
<tr>
<td>Blinks red and</td>
<td>yellow alternately</td>
<td>Any of the emergency stop buttons on the dock is pressed.</td>
</tr>
<tr>
<td>Solid Red</td>
<td></td>
<td>The dock is malfunctioning.</td>
</tr>
</tbody>
</table>

⚠️ When opening/closing the dock cover, DO NOT lift the dock cover edge or other parts of the dock cover directly to avoid damage.
Emergency Stop Button

There are two Emergency Stop Buttons on the dock. In an emergency situation, press the Emergency Stop Button to stop all dock movements when operating or maintaining the dock. The Status Indicators blink red and yellow alternatively after pressing the Emergency Stop Button.

If the aircraft is powered on but the motors are not running, the aircraft cannot take off after pressing the Emergency Stop Button. If the Emergency Stop Button is pressed when the aircraft is performing a flight task, the aircraft will fly to the alternate landing site after completing the flight task.

💡 • Pull out or rotate the button clockwise to release the Emergency Stop Button before conducting other operations (e.g. dock cover control).
Environment Sensors

DJI Dock integrates multiple environment sensors to provide information on wind speed, rainfall scale, temperature, and humidity, allowing users to monitor real-time environment condition and ensure flight safety.

Wind Speed Gauge Module

The wind speed gauge module is located on the top of the dock cover and consists of a wind speed gauge, an integrated security camera, and a camera auxiliary light.

1. Wind Speed Gauge: the wind speed gauge is used to measure wind speed near the dock. The wind speed gauge features self-heating and is able to work in low-temperature environments. Users can view real-time wind speed in DJI FlightHub 2. To ensure flight safety, the aircraft cannot take off or land when the wind speed is above 12 m/s.

2. Integrated Security Camera: the integrated security camera is used to monitor the real-time dock environment. Users can monitor the dock environment from dock livestreams in DJI FlightHub 2, and can check the aircraft status on the landing pad after opening the dock cover.

3. Camera Auxiliary Light: the camera auxiliary light can be enabled at night to assist the integrated security camera monitoring.

⚠️ The wind speed gauge can only measure the wind speed near the dock, which is different from the wind speed provided by local meteorological department. If the aircraft ascends to high altitude, the wind speed and direction may change significantly. Operate the dock and the aircraft with caution when the measured wind speed is close to 12 m/s.
Rainfall Gauge

The rainfall gauge is located near the wind speed gauge module, and is used to measure rainfall information near the dock. The rainfall gauge features self-heating and is able to work in low-temperature environments. Users can view the rainfall information in DJI FlightHub 2. To ensure flight safety, the aircraft cannot take off in heavy rain.

⚠️ • There is a pressure sensing module in the rainfall gauge. DO NOT press hard on the surface of the rainfall gauge. Otherwise, the pressure sensing module may be damaged.
  • Clean the rainfall gauge surface on a regular basis. Replace the rainfall gauge immediately if it is dented, deformed, or damaged.

Temperature and Humidity Sensor

DJI Dock features temperature and humidity sensors, which are used to measure ambient temperature and the temperature and humidity inside the dock. Users can open Project Page in DJI FlightHub 2 and click 🔄 > 📊 > Action, to view the temperature and humidity information.

To ensure flight safety, the aircraft cannot take off when the ambient temperature is below -20° C (-4° F). Flight tasks will be resumed after the ambient temperature is higher than -20° C (-4° F).

Water Immersion Sensor

The water immersion sensors are located in the lower compartment under the landing pad, and are used to detect whether the dock is immersed in water. If DJI FlightHub 2 prompts dock flooding, remove the water immediately and check whether the dock works properly. If the dock fails to work properly, make sure to turn off the AC power switch and backup battery switch, and contact DJI Support.
# Landing Pad

<table>
<thead>
<tr>
<th>Overview</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Return Vent</td>
<td>The air from the air conditioning system flows through the return vent and supply vent, and forms an airflow, adjusting the temperature and humidity inside the dock.</td>
</tr>
<tr>
<td>2. Supply Vent</td>
<td></td>
</tr>
<tr>
<td>3. Positioning Marks</td>
<td>There are four positioning marks on the landing pad for the aircraft to identify dock position.</td>
</tr>
<tr>
<td>4. Driving Rods</td>
<td>There are a pair of front and rear driving rods and a pair of left and right driving rods on the landing pad. The driving rods push the aircraft to the center of the landing pad after landing, and detect the aircraft position before taking off.</td>
</tr>
<tr>
<td>5. Charging Connectors</td>
<td>The charging connectors are located in the driving rods. After the aircraft is pushed to the center, the charging connectors will connect to the aircraft and charge the batteries automatically.</td>
</tr>
<tr>
<td>6. Landing Pad Bolts</td>
<td>Insert the triangular key and rotate counter-clockwise to loosen the landing pad bolts. Grab the edge of the landing pad to open the lower compartment of the dock.</td>
</tr>
<tr>
<td>7. Aircraft Orientation Mark</td>
<td>When placing the aircraft on the landing pad, make sure to align the aircraft heading with the aircraft orientation mark. Otherwise, the aircraft and the driving rods may be damaged.</td>
</tr>
<tr>
<td>8. Internal RTK Antennas</td>
<td>Make sure the landing pad is clear of obstacles and the internal RTK antennas are not covered. Otherwise, the signals will be obstructed and the positioning performance will be affected.</td>
</tr>
</tbody>
</table>
Dock RTK Module

The dock internal RTK module of the dock supports receiving dual-band multi-mode GNSS signals, providing high-precision data for centimeter-level positioning when used with the Matrice 30 Series Dock Version aircraft.

Make sure the dock RTK is calibrated before a flight task to ensure accurate flight along the flight route. The dock RTK values are already calibrated using the remote controller during dock configuration, and are not required to be recalibrated if the dock position remains the same. If the dock is moved, the position needs to be recalibrated in DJI Pilot 2 using the remote controller. Refer to the Installation and Setup Manual for details.

- Users can open DJI FlightHub 2 Project page, click 🚶 > 📊 > Action to view the dock RTK status.

Air Conditioning System

The air conditioning system facilitates temperature and humidity control of the dock. When the dock is in Idle state, the air conditioning system will automatically adjust the temperature and humidity inside the dock, providing a suitable environment for the aircraft and the Intelligent Flight Battery.

If the Intelligent Flight Battery temperature is above 35° C (95° F), the air conditioning system will start cooling to cool down the batteries. When the ambient temperature is below 0° C (32° F), the air conditioning system will start heating to prevent the propellers from freezing.

When opening the dock cover, the air conditioning system will lower the speed of the inner circulating fan to prevent dust or catkins from entering the return vent.

- Users can open the DJI FlightHub 2 Devices page, click Dock > 🧒, and enable Remote Debugging to start heating or cooling. To ensure the service life of the TEC air conditioning system, a five-minute interval is required when switching between cooling and heating operations, and a countdown will appear in DJI FlightHub 2. Wait for the countdown to end before switching operations.

Backup Battery

DJI Dock features a backup battery with a capacity of 12 Ah and maximum runtime of approximately 5 hours. If the dock is powered off due to an emergency power outage, the backup battery can provide power to the dock* so that the aircraft can safely return and land.

* In this case, the dock cannot charge the aircraft battery, the air conditioning system cannot work properly, and the self-heating of the wind speed gauge, the rainfall gauge, and the dock cover will be unavailable.
• Check and fix the issue as soon as possible to restore power to the dock. Make sure to turn off the backup battery switch if the power supply cannot be restored and the dock is not used for an extended period. Otherwise, the backup battery will overdischarge when powered on for more than 20 days. Replace the backup battery if overdischarged.

**Charging the Backup Battery**

If the dock is stored for an extended period, make sure to charge the backup battery before use:

1. Open the electrical cabinet door.
2. Remove the electrical cabinet plate.
3. Connect a three-core cable to the PE, N, and L terminals of the AC Power Input in the electrical cabinet.
4. Turn on the AC power switch to power on the dock. Turn on the backup battery switch to charge the backup battery.

When the dock is not in use for an extended period, make sure to maintain the backup battery by charging it for at least six hours. Refer to the following table for the backup battery maintenance intervals under different storage environment temperatures.
IP Rating of the Dock

1. Under stable laboratory conditions, DJI Dock achieves an IP55 protection rating by IEC 60529 standards when used with Matrice 30 Series Dock Version aircraft. The protection rating is not permanent, and may lower over an extended period. Maintain the device on a regular basis.

2. The dock does not achieve IP55 protection rating in the following circumstances:
   a. The electrical cabinet door is not firmly closed.
   b. The wind speed gauge module is not firmly installed.
   c. The dock cover is not firmly closed.
   d. When the waterproof rubber strip cannot be firmly attached to the dock cover. For example, when manually closing the dock cover.
   e. The dock shell is cracked or the waterproof adhesive is aged or damaged.

3. The body surface may become discolored after long-term use. However, such color change does not affect the performance and IP rating of the dock.

Dock Network Connection

The dock can be connected to a wired network or 4G network* for internet access. Users can choose different internet access based on actual needs. When the dock is connected to both a wired network and a 4G network, the 4G network works as a backup to the wired network. The dock will automatically switch to the 4G network if the wired network fails.

* 4G network service is not available in some countries or regions. Please consult your local DJI authorized dealer or DJI Support for more information.

### Storage Environment Temperature

<table>
<thead>
<tr>
<th>Temperature Range</th>
<th>Backup Battery Maintenance Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 20°C (68°F)</td>
<td>Every nine months</td>
</tr>
<tr>
<td>20°C to 30°C (68°F to 86°F)</td>
<td>Every six months</td>
</tr>
<tr>
<td>30°C to 40°C (86°F to 104°F)</td>
<td>Every three months</td>
</tr>
<tr>
<td>40°C to 60°C (104°F to 113°F)</td>
<td>Every month</td>
</tr>
</tbody>
</table>

⚠️ • The charging operation should be operated by a qualified professional. DO NOT touch the metal terminals in order to avoid an electrical shock. Make sure the cable is correctly connected to the PE, N, and L terminals.

• The backup battery cannot be charged when the battery temperature is above 40°C (104°F) or below -20°C (-4°F).
Aircraft

This chapter introduces the major features of the aircraft.
Aircraft

The Matrice 30 Series Dock Version aircraft mainly consists of the flight control system, communication system, vision system, image processing system, propulsion system, and power and battery system. This chapter describes the functions of these components.

The aircraft is already linked to the dock when purchased in the Matrice 30 Series Dock Bundle. Otherwise, follow the instructions to link the aircraft to the dock (the firmware of both the dock and the aircraft should be updated to the latest firmware version):

1. Open the electrical cabinet door using the triangular key.
2. Press the dock cover manual release button five times, and then press and hold the power button on the aircraft for five seconds or more. During the linking process, the dock cover status indicators will blink blue, and short beeps will sound from the dock.
3. When the linking process is successful, the dock status indicators will blink white.

- 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

Matrice 30 Series Dock Version aircraft flies in N mode (Normal) by default. In N mode, the aircraft utilizes the GNSS and the vision system that allows obstacle sensing in six directions to stabilize itself automatically. When obstacle sensing is enabled and the lighting and other environment conditions are sufficient, the maximum tilt angle of the aircraft will be 25°.

Vision System and Infrared Sensing System
The main components of the vision system (cameras with vision sensors) are located on the front, rear, left, right, top, and bottom of the aircraft. The infrared sensing system has two infrared sensors on each side of the aircraft (front, rear, left, right, top, and bottom).

The vision system constantly scans for obstacles and uses image data to calculate the aircraft position, and the infrared sensing system uses infrared sensors to detect obstacles and determine the flight altitude. Both systems work together to position the aircraft and sense obstacles during flight.

⚠️ To ensure a safe and steady flight, DO NOT block the vision system and the infrared sensing system.

### Detection Range

#### Detection Range of the Vision System

![Vision System Detection Range](image)

#### Detection Range of the Infrared Sensing System

![Infrared Sensing System Detection Range](image)

⚠️ 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

Obstacle sensing works best when the lighting is adequate and the obstacle is clearly textured. It does not work well with obstacles that are less dense such as twigs on trees. The infrared sensing system can only be used for large or diffuse reflective objects and rough surfaces.

⚠️ Pay attention to the flight environment. The vision system and infrared sensing system only work in certain scenarios.
- When the ambient light is insufficient, the vision positioning performance will be negatively affected. The auxiliary bottom light will be automatically enabled to assist the vision system.
- The vision system cannot function properly in dark environments and over surfaces without clear patterns or texture such as water and ice.
- Obstacle avoidance cannot detect certain obstacles such as iron wiring, cables, tree branches, blind spots, and mirrored surfaces.
- The measurement accuracy of the vision system is easily affected by the light intensity and the surface texture of the object. The vision system cannot work properly in the following situations:
  a. Flying near monochrome surfaces (e.g., pure black, white, red, or green) or those without clear texture.
  b. Flying near surfaces with strong reflected light or images.
  c. Flying near water, ice, or transparent surfaces.
  d. Flying near moving surfaces or objects (e.g., crowds of people or swaying reeds, shrubs, or grass).
  e. Flying in an area where lighting changes frequently or drastically or with direct exposure to strong light.
  f. Flying near extremely dark (< 15 lux) or extremely bright (> 10,000 lux) surfaces.
  g. The aircraft speed is too fast when flying below 2 m above the ground (e.g., faster than 14 m/s at a 2m height or 5 m/s at a 1m height).
  h. Tiny obstacles (e.g., iron wires, cables, tree branches, or leaves).
  i. The lens is dirty (e.g., from raindrops or fingerprints).
  j. In low-visibility environments (e.g., heavy fog or snow).
- The infrared sensing system may NOT detect the distance accurately in the following situations:
  a. Flying near 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 infrared sensing system. DO NOT hang or place anything in an area that will block the vision system, infrared sensing system, and their observation range.
• Make sure that the sensor lens is clear and free of stains. DO NOT interfere with the vision system 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 systems. 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 System Calibration
The vision system installed on the aircraft is factory calibrated. If the aircraft experiences a collision or a significant change in the operating temperature, calibration may be required. DJI FlightHub 2 will display a prompt when calibration is required. Follow the instructions to calibrate the vision system when prompted:

1. Power on the aircraft.
2. Connect the aircraft to a computer.
3. Launch DJI Assistant 2 and log in using a DJI account.
4. Select the M30 Series, then click the calibration button.
5. Position the aircraft with the vision system facing the dotted pattern displayed on the computer screen, and follow the on-screen instructions to calibrate the vision sensors on each side.

• DO NOT power off the aircraft or unplug the USB-C cable after calibration. Wait for the data calculation to complete.
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 route 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 flight 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 too 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.

During RTH, the aircraft will automatically adjust the tilt and pan angles of the gimbal so that the gimbal camera points towards the RTH path.
• When manually adjusting the gimbal pan angle in DJI FlightHub 2, the aircraft orientation will change accordingly. Since the aircraft has visual blind spots, the aircraft's flight speed will be affected after the orientation has changed. DO NOT manually adjust the gimbal pan angle during RTH.
• When the lighting and environment conditions are unsuitable for vision systems, the aircraft will rely on the laser rangefinder on the gimbal camera to assist in distance measurement. Once the user adjusts the gimbal pan angle from the RTH path, obstacles on the RTH path will not be recognized, and flight safety risks will increase. DO NOT manually adjust the gimbal pan angle during RTH.

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.

• Aircraft low battery
  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.
  The user can cancel RTH by pressing the RTH button on the remote controller. If RTH is canceled following the warning, the Intelligent Flight 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 Indicator Diagram]

<table>
<thead>
<tr>
<th>Battery Level Warning</th>
<th>Implication</th>
<th>Flight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Battery RTH</td>
<td>The remaining battery level is only enough for the aircraft to fly to the Home Point safely.</td>
<td>Flight task will be interrupted and the aircraft will enter RTH. Dock landing detection will be triggered before landing.</td>
</tr>
<tr>
<td>Auto Landing</td>
<td>The remaining battery level is only enough for the aircraft to descend from its current altitude.</td>
<td>The aircraft will land automatically and dock landing detection will be triggered.</td>
</tr>
<tr>
<td>Estimated Remaining Flight Time</td>
<td>The estimated remaining flight time of the aircraft is based on its current battery level.</td>
<td>/</td>
</tr>
</tbody>
</table>

⚠️ 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.

**Loss 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 action is set to RTH, the Home Point was successfully recorded and the compass is functioning normally, Failsafe RTH automatically activates after the signal between the dock and the aircraft is lost for more than six seconds.

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 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 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 enters Preset RTH if the remote controller signal is restored during Original Route RTH. The Original Route RTH 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 the RTH distance is less than 5 m.
3. The aircraft begins to land when it reaches above the Home Point.

⚠️ The aircraft may not be able to return to the Home Point if the positioning performance is poor. In case of loss of remote controller signal, the aircraft may enter ATTI mode and will automatically land.

   • 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.
   • The aircraft cannot bypass obstacles during RTH if the lighting and environment conditions are unsuitable for the vision systems.
   • The aircraft may not be able to return to a Home Point when 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. 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 the RTH distance is less than 5 m.
   • 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 lands and the motors stop after reaching the Home Point.
RTH Settings

Advanced RTH will plan the RTH path using Preset RTH.

Preset:

- **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.
  - Current altitude ≥ RTH altitude
    - The aircraft will return to home using the best path at the current altitude.

- **RTH distance is within 5-50 m**
  - The aircraft will adjust its orientation and fly to the Home Point in a straight line at the current altitude.

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

<table>
<thead>
<tr>
<th>Lighting and Environment Conditions</th>
<th>Suitable for Vision Systems</th>
<th>Unsuitable for Vision Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTH distance &gt; 50 m</td>
<td>The aircraft can bypass obstacles and GEO zones</td>
<td>The aircraft cannot bypass obstacles but can bypass GEO zones</td>
</tr>
<tr>
<td>The user actively triggers RTH</td>
<td>Preset</td>
<td>Preset</td>
</tr>
<tr>
<td>Aircraft low battery</td>
<td>Preset</td>
<td>Original route RTH, Preset RTH will be executed when the signal is restored</td>
</tr>
<tr>
<td>Loss of remote controller signal</td>
<td></td>
<td></td>
</tr>
</tbody>
</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.
- Set Advanced RTH as Preset if there are power lines or 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 RTH settings 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 difference at different altitudes. Pay extra attention to the battery power prompts and warning prompts in DJI FlightHub 2.
- During Advanced RTH, if the lighting condition and environment becomes unsuitable for the vision systems, the aircraft cannot bypass the obstacles on the RTH path. In this case, the aircraft will use the infrared sensor and the laser rangefinder on the gimbal camera to assist in distance measurement. Fly with caution. Make sure to set an appropriate RTH altitude before entering RTH.
- 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, 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.
- The aircraft will bypass any GEO zones encountered when it is flying forward during Advanced RTH. Fly with caution.

Straight Line RTH
The aircraft will enter Straight Line RTH when the lighting is not sufficient and the environment is not suitable for the Advanced RTH.
During the Advanced RTH process, once there are dense obstacles (such as dense woods) on the RTH path or obstacles are encountered on the RTH path at night, the aircraft will hover for 30 seconds and then start a straight line RTH.

### Straight Line RTH Procedure

1. The Home Point is recorded.
2. Straight Line RTH is triggered.
3. The aircraft brakes and hovers in place.
   a. If the aircraft is farther than 50 m from the Home Point when RTH begins, the aircraft first ascends to a height of 20 m (this step will be skipped if the current height is higher than 20 m), then the aircraft adjusts its orientation and ascends to the preset RTH altitude and flies to the Home Point. If the current altitude is higher than the RTH altitude, the aircraft will fly to the Home Point at the current altitude.
   b. If the aircraft is at a distance of 5 to 50 m from the Home Point when RTH begins, the aircraft adjusts its orientation and flies to the Home Point at the current altitude. If the current altitude is lower than 2 m when RTH begins, the aircraft will ascend to 2 m and flies back to the Home Point.
   c. The aircraft lands immediately if it is less than 5 m from the Home Point when RTH begins.
4. The aircraft lands and the motors stop after reaching the Home Point.

💡 The user can also gain control using remote controller B and exit RTH by pushing the control stick in the opposite direction of flight (e.g., pushing the throttle stick down when the aircraft is ascending).

### Obstacle Sensing During RTH

The aircraft can sense and avoid obstacles during RTH if the lighting is sufficient for obstacle sensing. The obstacle sensing procedure is as follows:

1. The aircraft decelerates when an obstacle is sensed from a distance of approximately 20 m (65.62 ft). If the distance from the obstacle is less than 20 m, the aircraft will fly backward (or forward) to keep a distance of more than 20 m.
2. The aircraft stops and hovers, then ascends to avoid the obstacle. Eventually, the aircraft stops ascending when it is at least 5 m (16.4 ft) above the detected obstacle.
3. The aircraft continues flying to the Home Point at its current altitude.

If the aircraft cannot ascend to avoid the obstacle, it will hover. A prompt will appear in DJI FlightHub 2, reminding users to check actual flight environment using the aircraft livestream.

⚠️ To ensure the aircraft flies forward to the Home Point, the user is unable to rotate the aircraft during RTH.
   • During RTH, obstacles on either side of the aircraft cannot be detected or avoided.
Dock Landing Detection
Dock landing detection is activated during auto landing and is executed as follows:

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 (such as 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 drops to 10%.

3. If the aircraft cannot detect the landing status of the dock (such as the dock and the aircraft are disconnected), or the aircraft fails to land on the dock due to bad weather, the aircraft will descend below 3 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%.

⚠️ Make sure to set an alternate landing site during dock configuration. 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 an alternate route altitude during dock configuration.
Aircraft Indicators

The aircraft has front and rear indicators.

1. Front indicators: blinks green and red alternately to indicate the nose of the aircraft.
2. Rear indicators: blinks green to indicate the rear of the aircraft when flying. When the aircraft is powered on but not in flight, the rear indicators will show the aircraft statuses.

Refer to the table below for the different aircraft statuses.

<table>
<thead>
<tr>
<th>Normal States</th>
<th>Blinks red, yellow, and green alternately</th>
<th>Powering on and performing self-diagnostic tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>Blinks green once *</td>
<td>Only GPS is used for positioning (RTK is not used)</td>
</tr>
<tr>
<td>**</td>
<td>Blinks green twice repeatedly *</td>
<td>Vision systems enabled</td>
</tr>
<tr>
<td></td>
<td>Blinks green quickly</td>
<td>RTK enabled and RTK data is being used</td>
</tr>
<tr>
<td></td>
<td>Blinks yellow slowly</td>
<td>Attitude mode (GNSS is not available)</td>
</tr>
<tr>
<td>Warning States</td>
<td>Blinks yellow quickly</td>
<td>Remote controller signal lost</td>
</tr>
<tr>
<td></td>
<td>Blinks red slowly</td>
<td>Low battery level, takeoff is disabled **</td>
</tr>
<tr>
<td></td>
<td>Blinks red quickly</td>
<td>Critically low battery</td>
</tr>
<tr>
<td></td>
<td>Blinks red for five seconds ***</td>
<td>IMU error</td>
</tr>
<tr>
<td></td>
<td>Solid Red</td>
<td>Critical error</td>
</tr>
</tbody>
</table>
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. Pay attention to the dock and the aircraft livestream. Fly with caution.

**Propellers**

**Using the Propellers**

The Matrice 30 Series Dock Version aircraft supports both the 1671 Propeller and the 1676 High Altitude Propeller (excluded). Refer to the diagram below to choose the appropriate propellers according to the aircraft takeoff weight and the expected maximum flight altitude. The service ceiling is the theoretical maximum altitude that the aircraft can fly at normally, on the condition that the wind speed does not exceed 12 m/s. The aircraft braking and acceleration capabilities will be reduced when flying near the service ceiling. Use the 1676 High Altitude Propeller when flying at altitudes higher than 3000 m (9842.5 ft) above sea level.

<table>
<thead>
<tr>
<th>Takeoff weight</th>
<th>Max. Takeoff Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.8</td>
<td>7000</td>
</tr>
<tr>
<td>3.85</td>
<td>6500</td>
</tr>
<tr>
<td>3.9</td>
<td>6000</td>
</tr>
<tr>
<td>3.95</td>
<td>5500</td>
</tr>
<tr>
<td>4</td>
<td>5000</td>
</tr>
<tr>
<td>4.05</td>
<td>4500</td>
</tr>
<tr>
<td>4.1</td>
<td>4000</td>
</tr>
<tr>
<td>4.15</td>
<td>3500</td>
</tr>
<tr>
<td>4.2</td>
<td>3000</td>
</tr>
</tbody>
</table>

- **1676 High Altitude Propeller Service Ceiling**
- **1671 Propeller Service Ceiling**
• Using high altitude propellers for extended periods may reduce motor life. Compared with the ordinary propellers, if high altitude propellers are used to fly at altitudes lower than 3000 m (9842.5 ft) above sea level, the motor temperature rises higher, which may reduce motor life or even damage it. Therefore, only use the high altitude propellers at the recommended altitude or under suitable working conditions.
• Only use official DJI propellers. DO NOT mix propeller types.
• 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.
• Power off the aircraft before examining or replacing any propellers.
• To avoid injury, stay away from rotating propellers or motors.
• The dock air conditioning system will start heating before each flight task when the ambient temperature is approximately 0°C (32°F) or below to prevent the propellers from freezing. Return to the dock and land the aircraft as soon as possible if a motor overload warning prompt appears in DJI FlightHub 2.

Replacing the Propeller Blades
Use the H2.0 hex key to replace the propellers.

It is recommended 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.

• The propeller blades are sharp. Handle with care.
FPV Camera
The Matrice 30 Series Dock Version aircraft is equipped with a night vision FPV camera, which can optimize images in poor lighting conditions at night. Users can view real-time flight information in DJI FlightHub 2 via the FPV camera.

Cameras
Both Matrice 30 and Matrice 30T Dock Version feature a laser rangefinder, a zoom camera, and a wide-angle camera. The laser range finder can provide the location and distance information of a target during inspections or search-and-rescue operations. The zoom camera and the wide-angle camera enable users to quickly switch to a highly magnified zoom view for detailed observation after recognizing a target in the wide-angle camera view. Matrice 30T Dock Version is also equipped with a long-wave infrared thermal imaging camera, which can shoot thermal images.

The zoom camera features lens defogging. After powering on, the zoom camera will automatically heat the zoom lens for five seconds 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.

• 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.
**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 Flight Route Library to achieve more accurate flight route planning. Go to the DJI FlightHub 2 User Guide and then refer to the Flight Route Library 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. Go to the DJI FlightHub 2 User Guide and then refer to the Real-Time Device Information section for more information.

**Storing Media Files**

A 32 GB microSD card is in the microSD card slot when shipped. The aircraft supports microSD cards with a maximum capacity of up to 128 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.

- The following microSD cards are recommended:
  - Lexar 667x U3 A2 Class10 32GB/64GB/128GB
  - Lexar 1066x U3 A2 V30 32GB/64GB/128GB
  - SanDisk Extreme PRO U3 A2 V30 32GB/64GB/128GB
  - SanDisk Extreme U3 A2 V30 32GB/64GB/128GB
- 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

The 3-axis gimbal stabilizes the camera, allowing the user to capture clear and steady photos and videos during flight. Refer to the figure below for the tilt, pan, and roll range of the gimbal.

Controllable Rotation Range

⚠️ • 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.

Gimbal Lock

Rotate the gimbal tilt down to 0° to unlock the gimbal before use.
It is recommended to rotate the gimbal tilt up to +90° to lock the gimbal before transporting the aircraft.
Setting Gimbal Actions
The gimbal pitch and yaw angles at each waypoint can be set in DJI FlightHub 2 when editing a flight route. Go to the DJI FlightHub 2 User Guide and then refer to the Edit Waypoint Routes section for more information.

Aircraft RTK
Matrice 30 Series Dock Version aircraft features an internal RTK module. Together with the dual-antenna technology, the aircraft can withstand strong magnetic interference from metal structures and high-voltage lines, ensuring a safe and stable flight. Accurate positioning data can be obtained when the aircraft is used with the dock internal RTK module, allowing for a precise flight route and precision landing.

💡 The number of searched satellites should be greater than 20 for the aircraft RTK data to converge. If there is strong signal interference or ionospheric scintillation, the aircraft RTK data may not converge.

IP Rating of the Aircraft
1. Under stable laboratory conditions, the Matrice 30/30T Dock Version aircraft achieves an IP55 protection rating by IEC 60529 standards when equipped with TB30 Intelligent Flight Batteries. The protection rating is not permanent, and may lower over an extended period.
   a. DO NOT fly when the amount of rainfall exceeds 100 mm in 24 hours.
   b. DO NOT fold the frame arms in the rain. If the aircraft needs to be moved away from the dock, move the aircraft indoors, and make sure it is dry before folding frame arms.
   c. Make sure the battery ports, battery compartment ports, battery surfaces, and battery compartment surfaces are dry before inserting the batteries.
   d. The product warranty does not cover water damage.
2. The aircraft does not achieve an IP55 protection rating in the following circumstances:
   a. Frame arms are folded.
   b. Batteries other than the TB30 Intelligent Flight Batteries are used.
   c. The cover for the ports are not attached correctly.
   d. The waterproofing top shell plug is not firmly attached to the top shell.
   e. 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 TB30 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

The TB30 battery has the following features:

1. Battery Level Display: the battery level LEDs display the current battery level.
2. Battery self-discharge will be triggered if the battery level is higher than 50%. Discharging the battery level to 50% can extend battery life.
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: DJI FlightHub 2 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 IP55 rating standards.
• Refer to the user manual, safety guidelines, and battery labels before use. Users shall take full responsibility for all operations and usage.
• If only one battery is usable after takeoff, land the aircraft promptly and replace the battery.
• Use batteries provided by DJI. DO NOT use other batteries.
• DO NOT drop or damage the battery. DO NOT place heavy objects on the battery. Avoid dropping batteries.
• Always use a clean, dry cloth when cleaning the battery terminals. Otherwise, this may cause poor contact, resulting in energy loss or failure to charge.

Using the Battery

Using Paired Batteries
Charge and discharge the two batteries together to optimize flight performance and maximize battery life.

After the batteries are inserted and the aircraft is powered on, if there is a huge difference between their battery life, DJI FlightHub 2 will display a prompt alerting the user to such condition of the batteries. It is recommended to replace them with batteries with similar performance before use.

Checking the Battery Information
There are two ways to view the battery information in DJI FlightHub 2.
1. Open the Project page, click > to view the battery level and battery status.
2. Open the Devices page, click Dock > to view the battery level and battery temperature, battery cycles and other information.

Warming the Battery
The battery has a built-in self-heating feature for when operating in low-temperature conditions:
1. When the battery temperature is lower than 18° C (64.4° F), self-heating starts once the battery is inserted into the aircraft and powered on. Self-heating will turn off automatically after takeoff. The aircraft cannot takeoff when the battery temperature is lower than 10° C (50° F). Flight tasks will start after the battery is warmed up.
2. If the battery is not inserted into the aircraft, press and hold the battery level button for five seconds to initiate self-heating. The battery will continue to keep warm with a temperature between 15° to 20° C (59° to 68° F) for approximately 30 minutes. Press and hold the battery level button for five seconds to stop self-heating.
3. When the battery is warming up and keeping warm the battery level LEDs will blink as follows.
Dock Warming

If the aircraft is powered off in low-temperature environments, the dock will constantly provide a power supply for the battery to keep warm, so that the aircraft can take off at any time in cold conditions. After the battery charging is completed, if the aircraft is in the idle status, the battery will keep warm at a temperature between 10° to 20° C (50° to 68° F). The battery will stop keeping warm if the user launches an Immediate flight task, powers on the aircraft, or starts battery charging.

Charging Mode

DJI FlightHub 2 provides two charging modes (Schedule Mode and Standby Mode). When the dock is in idle status, the battery level and the temperature inside the dock can be automatically modified to meet different scenarios. Two hours before a Timed flight task, the dock will automatically charge the batteries and wait for the flight task to be executed after the charging is completed.

Schedule mode is suitable for performing regular tasks. The battery will be charged between 55% and 60% when no task is assigned.

Standby mode is suitable for performing urgent tasks. The battery will be charged between 90% and 95% when no task is assigned.

Switching Charging Mode: open the DJI FlightHub 2 Project page, click > > Action to switch to different charging modes.

⚠️ Battery level may be low under Schedule Mode. If the Plan Timer is selected as Immediate, Low Battery RTH may be triggered during the flight task.

⚠️ Maintaining a high power level in Standby Mode will affect battery life. It is recommended to select Schedule Mode if there is no need to take off at any time.
Charging the Battery
If the aircraft charging ports are properly connected after landing, the dock will automatically charge the Intelligent Flight Battery based on the flight task plans. The charging temperature range of the TB30 battery is 10° to 44° C (50° to 111.2° F). Charging will begin after the battery temperature reaches the charging temperature range. In this case, the charging time will be extended.

To charge the Intelligent Flight Battery, open the DJI FlightHub 2 Project page, click > Action, enable Remote Debugging, and then click Charging.

💡 • Users can also charge the battery in the Device Maintenance page: open Devices page, click Dock > Device Maintenance, enable Remote Debugging, and then click Charging.

Battery Maintenance
The Intelligent Flight Battery will conduct an intelligent self-evaluation. A prompt will appear in DJI FlightHub 2 when battery capacity calibration or battery maintenance is required. Open DJI FlightHub 2 Devices page, click Dock to enable Remote Debugging to start battery maintenance, and the dock will perform battery maintenance automatically. During battery maintenance, the battery will first discharge to below 20%, and the maintenance process will last three to eight hours based on different battery levels. Battery maintenance will be interrupted if the dock receives a flight task during this process.

💡 • To save discharge time and shorten maintenance time, it is recommended to start battery maintenance when the battery level is low (e.g. after completing a flight task).

⚠️ • Battery performance will be affected if the battery is not maintained for an extended period.
  • The battery contains hazardous chemicals, DO NOT dispose of the battery in a regular waste disposal container. Strictly follow your local regulations regarding the disposal and recycling of batteries.
  • Batteries that are over-discharged, swollen, involved in a crash, come into contact with liquid, damaged, or leaky must be disposed. DO NOT use any battery in such a condition to avoid damage or injury. Contact a professional battery disposal or recycling agent for further assistance.
DJI FlightHub 2

This chapter introduces the main interface and functions in DJI FlightHub 2, including real-time device information and device management.
**DJI FlightHub 2**

DJI FlightHub 2 is a cloud-based aircraft task management platform. When used with DJI Dock and Matrice 30 Series Dock Version aircraft, DJI FlightHub 2 can perform flight task planning and management, monitor real-time flight information, and conduct integrated dock management to achieve unattended operations.

### Cloud Management

**Organization and Project Management**

Users can visit https://fh.dji.com to enter the DJI FlightHub 2 Organization page after logging in with a DJI account. DJI FlightHub 2 supports centralized management for Projects, Members, and Devices.

Before first use, refer to DJI FlightHub 2 User Guide, and follow the instructions to create an organization and a project, bind the dock and add members to a project, and assign permissions to members.

![Screen shot of DJI FlightHub 2](image)

💡 • Users can click the user account in the upper right corner, select User Center to view the account and organization information, and add a mobile number or email address for a service subscription. After the service is subscribed, the system will automatically send a message or email to notify users of an emergency or failed task.
Project Details

In the Project page, select a project and click to enter the project. Users can plan flight routes, create task plans, manage models and media files, as well as monitor real-time flight task information.

- **Team**: displays team, device, and flight task information of the project.
- **Annotation**: users can create and manage annotations (e.g. cell sites and other buildings) on the map.
- **Map**: users can view and manage the imported 2D and 3D models.
- **Model Library**: users can import and view 2D and 3D models. Model Library supports displaying the model on the Map, which can be further used to create flight routes.
- **Media Files**: users can view and manage the uploaded media files. Media files (photos and videos) can be automatically uploaded to the dock after each flight task. And the aircraft will automatically delete the file after it is uploaded to the dock. The dock will upload the received media files to DJI FlightHub 2. And the dock will automatically delete the file after it is uploaded to DJI FlightHub 2.
- **Flight Route Library**: users can import or create flight routes, as well as edit flight route settings and waypoint actions in Flight Route Library to achieve more accurate flight route planning.
- **Task Area Management**: users can manage custom flight areas and custom GEO Zones. The aircraft can bypass GEO Zones during RTH or when performing FlyTo tasks.
Task Plan Library: users can designate flight route and dock, and create task plans in Task Plan Library based on their actual needs. The aircraft will take off automatically according to the preset Plan Timer. Resume Flight from Breakpoint can be enabled when creating a task plan or can be triggered in the task plan library. In case of low environment temperatures, strong winds, or long flight routes, the flight task cannot be completed in a single flight. In this case, if Resume Task from Breakpoint is enabled (or triggered), a new task will be automatically generated, and the aircraft will resume the flight from the breakpoint and complete the task after the battery charging is completed.

For more details, refer to the DJI FlightHub 2 User Guide which is available to download from the official DJI website at https://www.dji.com/flighthub-2/downloads.

Real-time Device Information

When the dock is performing a flight task, DJI FlightHub 2 will display real-time device information, including the task status, flight route (green), aircraft trajectory (blue), and livestreams.

Device Status Window

Select a device and click to open the device status window. Users can view the flight task status, device operation status, and device information in the device status window.

1. Flight Task Status: indicates the flight task status of the selected dock. Flight task status includes task plan status and live flight controls status. Click to view all flight tasks of the dock on that day.
2. Dock Information: users can view dock flight task status, the dock status, wind speed, ambient temperature, rainfall, internet speed, and media file upload status.

If a warning message appears during flight, it will be displayed in the system status bar. Tap to view the message. Warnings that are not reported in real-time will not be displayed.

3. Live: click to view the dock livestream.

4. Actions: click to view more information about the dock and the aircraft, change aircraft settings and conduct remote debugging.

- The dock and aircraft can only be remotely operated by one user at a time.
- After Remote Debugging is enabled, yellow and black strips will appear around the dock and aircraft in the device status window. Users can hover the mouse over the dock image to view the operator account.
5. **Aircraft Information:** users can view the aircraft flight task status, device warnings, transmission signal strength, satellite connection status, battery status, and aircraft altitude. When the aircraft is disconnected from the dock, the last recorded time and coordinates of the aircraft will be displayed. Users can click the information to center the aircraft location at the middle of the map and then right-click to create a PinPoint to help locate the aircraft during a search. The information will not be displayed after the aircraft re-connects to the dock.

6. **Aircraft Livestream:** click FPV Camera or M30/M30T Camera to view the aircraft livestream.

   ![Aircraft Camera View](image)

   a. **Switching Camera Views:** click the camera type to switch between different camera views.
   
   b. **Recording Livestreams:** during a livestream, click 🎥 to start recording, and the recorded video will be stored to Media Files automatically. Different camera views are recorded separately and cannot be recorded at the same time. Switching camera views during livestream does not affect recording.

7. **Aircraft Control:** Project administrators can remotely operate the aircraft after clicking Aircraft Control. Refer to the Live Flight Controls section for more information.
Live Flight Controls
DJI FlightHub 2 supports sending commands directly to the dock aircraft and remotely operating the aircraft.

💡 • Make sure the dock firmware version is later than v01.03.0902, and the aircraft version is later than v06.02.0803 before using Live Flight Controls.

Aircraft Control

1. Obtain Aircraft Control: users can right-click the dock or aircraft icon on the map or click Aircraft Control on the device status window to enable Live Flight Controls.

💡 • Users can click the FPV Camera or M30/M30T Camera button to view the aircraft livestream.

• When Live Flight Controls is enabled, the remote control latency will be displayed. Users can hover the mouse over \( \uparrow \) to view the uplink and downlink latency. Uplink means transferring data from the aircraft to the cloud, while downlink refers to the data transmission from the cloud to the aircraft.

2. Flight Settings:
   a. Task Altitude (ALT): the lowest altitude (relative to the takeoff point) of the aircraft when performing FlyTo tasks. DJI FlightHub 2 will display a prompt when the aircraft altitude is lower than the task altitude.

   b. RTH Altitude (ALT):
      When the dock aircraft is more than 5 m away from the Home Point horizontally, the aircraft will ascend to the RTH altitude and return to home on an optimal route.
When the dock aircraft is 5 m or less than 5 m away from the Home Point horizontally, the aircraft will maintain the current altitude (higher than 20 m) or ascend to 20 m first before returning to home.

c. On Signal Lost: users can choose from Return to Home, Hover, or Continue. The dock aircraft will perform the signal lost action when the aircraft is disconnected from the dock. To ensure flight safety, it is recommended to set the signal lost action as Return to Home.

d. Destination Altitude (AGL): the default altitude above the ground of the FlyTo destination.

💡 • All parameters can be set when the dock aircraft is powered off.

3. Situation Awareness: users can view the Home Point location, aircraft and payload orientation, and obstacle-sensing information in the Navigation Display.

4. Take Off: when the aircraft is inside the dock, users can click Take Off, and the aircraft will ascend to the task altitude and hover.

5. Keyboard Commands: when the Live Flight Controls status is Manual Flight, users can click the buttons or press the keyboard keys to control aircraft movements.

```
[Q] Yaw left  [E] Yaw right
[W] Forward  [S] Backward
[A] Roll left  [D] Roll right
[C] Ascend  [Z] Descend
[Space] Pause
```

⚠️ • DO NOT control the aircraft to land on the dock using keyboard commands. Otherwise, the aircraft will not be able to stop propellers after landing and cannot return to the dock automatically.

6. FlyTo Tasks: users can right-click on the map or a PinPoint to set a FlyTo destination. After the FlyTo destination is set, a virtual flight route will be displayed on the map. Users can click Start, and the aircraft will fly directly to the destination.

⚠️ • When the aircraft is inside the dock and the FlyTo task is distributed, the aircraft will ascend to the task altitude and fly directly to the destination. When the altitude of the FlyTo destination is lower than the task altitude, the aircraft will fly to the destination at the task altitude and then descend to the destination.

⚠️ • To ensure flight safety, a reasonable task altitude, RTH altitude, and FlyTo destination altitude should be set based on the surrounding environment and task requirements and at least 5 m lower than the maximum flight altitude allowed in Altitude Zone. Users should also make sure that there are no obstacles during flight.
• When Low Battery RTH is triggered, DO NOT cancel RTH or enable Live Flight Controls during RTH. Otherwise, the aircraft will exit RTH and may not be able to return to the dock. When the remaining battery level is only enough for the aircraft to descend from its current altitude, the aircraft will land automatically, and the automatic landing cannot be canceled.

💡 • If Live Flight Controls is enabled when the aircraft is performing a flight task, users can click Resume to resume the task or click RTH to disable Live Flight Controls, and the aircraft will return home automatically.
Camera Control

1. Obtain Camera Control: users can click the camera view button to start livestream and click to obtain the payload control.

2. Switch Cameras: users can switch between wide-angle, zoom, and infrared cameras (M30T camera view is used as an example here.) The infrared camera supports:
   - Zoom: Click the IR zoom ratio in the lower right corner to change the ratio.
   - SBS: Click SBS to display the infrared and zoom camera views side by side.
   - Isotherm: Displays the highest and lowest temperatures of the objects within the camera view.
   - IR Palette: Click to change the IR palette color.

3. PSDK Control: DJI FlightHub 2 supports remotely operating the PSDK devices. See PSDK Control for more information.

4. Laser Rangefinder: click to obtain the coordinates and altitude of the subject on the focal point, as well as the distance between the subject and the dock aircraft.

5. Control Gimbal: users can choose from Recenter, Gimbal Down, Recenter Gimbal Pan, or Gimbal Tilt Down. The gimbal control also supports:
   - Double-click on the livestream view to center the view around the clicked point.
   - Drag the livestream view to change the gimbal orientation.
   - Press [←] [→] [↑] [↓] to fine-tune the gimbal angle.

6. Add PinPoint: click to add a PinPoint of the object on the focal point. Users can also right-click the PinPoint on the map and choose to Face PinPoint.

7. Gimbal Angles: displays the gimbal pan and tilt angles.
8. Adjust Zoom Scale: users can adjust the zoom slider or scroll with the mouse to zoom in or out on the livestream view.

9. Capture Media Files: users can take photos or record videos and view the remaining storage for media files.

**PSDK Control**

Click ✂️ to enter the PSDK control interface.

- **Main Interface:** displays the PSDK functions, including but not limited to the speaker, lighting device, and gimbal control, depending on the PSDK device installed.
- **Settings:** click 🛠️ to customize the PSDK device settings.

Take a third-party PSDK speaker as an example.

![PSDK Control Interface]

- **a. Create Broadcast Task:** click New to select from Record & Broadcast, Text to Speech, or Import Audio File.

- **💡 Users need to allow DJI FlightHub 2 to access the microphone and install a voice input device if necessary.**

- **b. Broadcast List:** displays all cloud files in the current project. Files stored in the PSDK speaker are not included.

- **c. Broadcast Settings:** users can set the loop play and adjust the broadcast volume.

- **d. Broadcast Status:** displays the current status of the speaker. Click 🎧 to preview the audio. Click 🗣️ and the dock aircraft will broadcast the audio.
Dock Management

In the Devices page, click Dock to switch to Dock Management. Administrators can view the device warning messages and conduct remote debugging.

: click to view warning details of the dock and aircraft. The warning messages include the start and end time, warning level, device type, error code, content, and recommended solutions.

: click to open Device Maintenance page, users can view device details and conduct remote debugging.

...: click and select Edit to bind the dock to a specific project. Select Delete to remove the device from this organization.

- If the dock is deleted, connect the remote controller to set up the dock and rebind the dock to an organization. Exercise Delete with caution.

Device Maintenance

Device Information

Users can view device information and modify aircraft settings in the Device Maintenance page.
1. Dock Information: users can view the dock status, total operation and flight time, network connection, dock satellite connection, supply voltage, remaining maintenance days, dock position, and alternate landing site.

2. Dock Environment Information: users can view the dock internal temperature and humidity, external temperature, rainfall, real-time wind speed, and other environmental information.

1. Aircraft Information: users can view the total flight time and flight total, video transmission signal strength, and other aircraft information.

2. Battery Information: users can view the battery cycles, battery voltage, battery temperature, and battery level.

3. Aircraft Settings: users can enable/disable the beacons, modify maximum altitude and maximum flight distance, view alternate route altitude, enable/disable obstacle sensing, and switch charging modes. Click to view the detailed descriptions for the parameters.

⚠️ After disabling obstacle sensing, the aircraft cannot detect or bypass obstacles and may cause the aircraft to crash.
1. Remote Debugging: users can enable Remote Debugging to control the dock and the aircraft if any device issue occurs.

2. Device Issue Report: users can submit an issue report to report issues that occurred to the dock or aircraft. Make sure to upload device logs in time and provide the QR code and the tracking number to DJI Support. Refer to the Device Issue Report section for more information.

3. Dock Control
   a. Users can restart the dock system, control the dock cover, the driving rods, and the sound-light alarm, control the air conditioning system, as well as formatting the dock storage.
   b. Click Live to view the dock livestream.

4. Aircraft Control:
   a. Users can power on/off the aircraft, charge and maintain the Intelligent Flight Battery, and format aircraft storage.
   b. Battery Management: click Charging to charge the Intelligent Flight Battery. Click Maintain to start automatic battery maintenance or capacity calibration for the Intelligent Flight Battery.
   c. Click FPV Camera or M30/M30T Camera to view the aircraft livestream.

⚠️ Remote Debugging cannot be enabled if the dock is connected to the remote controller for on-site operations.

⚠️ The aircraft cannot take off after enabling remote debugging.
Device Issue Report

If the device issue cannot be addressed via Remote Debugging, users can create device issue reports in the Device Maintenance page and provide the report information to DJI Support.

1. In the Device Maintenance page, click Device Issue Reports > Create Report.

```
Device Issue Reports

<table>
<thead>
<tr>
<th>Reporter</th>
<th>Model</th>
<th>SN</th>
<th>Name</th>
<th>Description</th>
<th>Upload Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>lirker.l</td>
<td>Dock</td>
<td>...</td>
<td>Dock_1</td>
<td>test</td>
<td>Uploaded</td>
</tr>
</tbody>
</table>

2. Fill in Report Details: such as issue description, issue occurrence time, and contact information, and uploading screenshots or video recording of the issue.

3. Upload device logs using one of the following methods:
   a. Click the checkbox to select designated device logs.
   b. Enable Synchronize Selection. DJI FlightHub 2 automatically associates device logs that coincide within the issue occurrence time range.

4. Click Submit to finish the issue report.

5. Click Devices > Dock > Device Issue Reports > , and then provide the QR code and the tracking number to DJI Support.

- Select and upload the device logs within the issue occurrence time range to reduce the log upload time. If the aircraft is powered off, make sure the aircraft is inside the dock, wait for the aircraft to automatically power on, and click the refresh button to reload the aircraft logs.
- Click Devices > Dock > Device Issue Reports to check all issue reports under the current organization.
- Make sure to power on the aircraft before uploading the aircraft logs.
- Users can also connect a computer to the dock and export device logs via DJI Assistant 2 (Enterprise Series), and then upload the device logs in Device Issue Report.
Appendix
Appendix

Aircraft Settings Using the Remote Controller

It is recommended to link the remote controller to the aircraft as controller B during on-site flight tests. Users can modify aircraft settings using the remote controller based on actual needs.

1. Run DJI Pilot 2, tap Enter Camera View on the homepage. Users will be directed to FPV Camera view by default after finishing the preflight check.
   Tap ••• on the upper-right to modify aircraft settings of each module:
   a. Sensing System Settings: set the horizontal and vertical obstacle braking distance and the warning distance. Default values are recommended.
   b. RTK Module: enable Maintain Positioning Accuracy mode.

2. After the remote controller gain control over the gimbal camera, tap CAM on the bottom-right corner, and then tap Infrared on the bottom-left corner to switch to the Thermal Camera view.
   Palette displays the highest and lowest temperature measurement values of the current view. Tap to choose between different infrared temperature measurement palettes.

Firmware Update

Using DJI FlightHub 2

1. Power on the aircraft and the dock. Ensure the aircraft is linked to the dock, and the battery level of the aircraft is higher than 20%.

2. Open DJI FlightHub 2, and click Devices > Dock.

3. Click Update, and a prompt will appear in the window indicating the firmware version and updates.

4. Select the multiple boxes on the left to upgrade device firmware in batches.

5. Click Update, the firmware will be downloaded automatically.

6. The firmware of both the dock and the aircraft will be updated simultaneously. If the aircraft is not inside the dock, only the dock firmware will be updated.

7. The aircraft and the dock will restart automatically after the firmware update is done.

⚠️ Make sure DJI FlightHub 2 is connected to the internet during the whole update process.

💡 The Intelligent Flight Battery installed on the aircraft will be updated to the latest firmware version.

• Users cannot operate the aircraft or the dock during firmware update. The aircraft and the dock will be available after the update is completed or cancelled.
Using DJI Assistant 2 (Enterprise Series)
Make sure that the computer is connected to the internet and that the device has sufficient power before updating the firmware. The aircraft firmware update follows the same steps as those of the dock firmware update. Take the dock firmware update as an example:

1. Open the electrical cabinet and power on the dock. Connect the computer to the USB-C port of the dock.
2. Launch DJI Assistant 2 and log in with a DJI account.
3. Select DJI Dock, and tap the firmware update button on the left side.
4. Select the firmware version and click to update. The firmware will be downloaded and updated automatically.
5. When the Update successful prompt appears, the update is completed, and the DJI device will restart automatically.

⚠️ Connect the remote controller or aircraft to a computer separately, as the assistant software does not support updating multiple DJI devices at the same time.
• DO NOT disconnect the dock and the computer during firmware update.

Access to a Third-Party Cloud Platform
Based on Cloud API, DJI Dock can connect to third-party platforms for private configuration, allowing users to build a customized management system. Visit https://developer.dji.com/cn/cloud-api/ for more information.

Users can bind the dock to a third-party cloud platform using the DJI Pilot 2 when configuring the dock. Refer to Installation and Setup Manual for more information.
## Specifications

### Dock

<table>
<thead>
<tr>
<th>General</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Name</td>
<td>DJI Dock</td>
</tr>
<tr>
<td>Total weight</td>
<td>105 kg (excl. aircraft)</td>
</tr>
</tbody>
</table>
| Dimensions | Dock cover opened: 1675×885×735 mm (L×W×H)  
Dock cover closed: 800×885×1065 mm (L×W×H) |
| Input Current | Max. 15 A      |
| Input Voltage | 100-240 VAC, 50-60 Hz |
| Input Power | Max. 1500 W    |
| AC Power Output | 100-240 VAC, 50/60 Hz, Max. 1 A, Max. 240 W (provide power supply for user devices) |
| Operating Temperature\(^1\) | -35° to 50° C (-31° to 122° F) |
| Ingress Protection Rating\(^2\) | IP55 |
| Number of Aircrafts Accommodated | 1 |
| Max. Allowable Landing Wind Speed | 12 m/s |
| Max. Operating Altitude | 4000 m |
| Max. Operating Radius | 7000 m |
| Receiving Frequency of RTK Base Station Satellite | Simultaneously receive:  
GPS: L1 C/A, L2  
BeiDou2: B1I, B2I, B3I  
BeiDou3: B1I, B3I  
GLONASS: L1, L2  
Galileo: E1, E5B |
| RTK Positioning Accuracy (fixed RTK enabled) | 1 cm+1 ppm (horizontal)  
2 cm+1 ppm (vertical) |

### Charging Performance

| Output Voltage | 18-26.1 VDC |
| Output Current | Max. 24 A |
| Output Power | Max. 626 W |
| Charging Time\(^3\) | Approx. 25 min |

### Transmission

| Video Transmission System | O3 Enterprise Transmission System |
| Operating Frequency | 2.4000-2.4835 GHz, 5.725-5.850 GHz |
| Max. Transmission Distance (Unobstructed, free of interference) | 15 km (FCC); 8 km (CE/SRRC/MIC) |
### Data Security
- AES-256

### Antennas
- 4 antennas, 2T4R

### Transmitter Power (EIRP)
- **2.4 GHz**:
  - <33 dBm (FCC)
  - <20 dBm (CE/SRRC/MIC)
- **5.8 GHz**:
  - <33 dBm (FCC)
  - <23 dBm (SRRC)
  - <14 dBm (CE)

### Air Conditioning System
- **Operating Voltage**: 48 VDC
- **Air Conditioning Type**: TEC Air Conditioning

### Backup Battery
- **Battery Capacity**: 12 Ah
- **Output Voltage**: 24 V
- **Battery Type**: Lead-acid battery
- **Backup Battery Life**: >5 hours

### Network Access
- **Ethernet Access**: 10/100/1000Mbps Adaptive Ethernet port

### Integrated Security Camera
- **Resolution**: 1920×1080
- **Field of View (FOV)**: 180°
- **Auxiliary Light**: Auxiliary White Light

### Lightning Protection
- **AC Power Port**: 40 KA Protection
- **Ethernet Port**: 1.5 KA Protection

### Supported Software
- **Applications**: DJI Pilot 2 (connects to the dock via DJI RC Plus for configuration and set up)
- **Cloud Platform**: DJI FlightHub 2
  - 3rd Party Platforms through DJI Cloud API

### Expansion Capability
- **Open Protocol**: DJI Cloud API
- **Edge computing**: DJI Dock provides internal power supply, data interface, and space for equipment installation.

---

[1] When the temperature is below -20° C (-4° F), the aircraft cannot perform flight tasks, the dock cover and the driving rods cannot be controlled automatically.

[2] This protection rating is not permanent and may reduce over time after long-term use due to aging and wear.

[3] The ambient temperature is 25°C (77° F), and the aircraft is charged from 10% to 90%.
## Matrice 30 Series Dock Version

<table>
<thead>
<tr>
<th>General</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (unfolded, excl. propellers)</td>
<td>470×585×246 mm (L×W×H)</td>
</tr>
<tr>
<td>Dimensions (folded)</td>
<td>365×215×226 mm (L×W×H)</td>
</tr>
<tr>
<td>Diagonal Wheelbase</td>
<td>668 mm</td>
</tr>
<tr>
<td>Weight (incl. two batteries)</td>
<td>3870 ± 10 g</td>
</tr>
<tr>
<td>Max Takeoff Weight</td>
<td>3998 g</td>
</tr>
<tr>
<td>Operating Frequency[1]</td>
<td>2.4000-2.4835 GHz, 5.725-5.850 GHz</td>
</tr>
<tr>
<td>Transmitter Power (EIRP)</td>
<td>2.4 GHz: &lt;33 dBm (FCC); &lt;20 dBm (CE/SRRC/MIC) 5.8 GHz: &lt;33 dBm (FCC/SRRC); &lt;14 dBm (CE)</td>
</tr>
<tr>
<td>Hovering Accuracy (windless or breezy)</td>
<td></td>
</tr>
<tr>
<td>Vertical:</td>
<td></td>
</tr>
<tr>
<td>±0.1 m (with Vision Positioning)</td>
<td></td>
</tr>
<tr>
<td>±0.5 m (with GPS Positioning)</td>
<td></td>
</tr>
<tr>
<td>±0.1 m (with RTK positioning)</td>
<td></td>
</tr>
<tr>
<td>Horizontal:</td>
<td></td>
</tr>
<tr>
<td>±0.3 m (with Vision Positioning)</td>
<td></td>
</tr>
<tr>
<td>±1.5 m (with GPS Positioning)</td>
<td></td>
</tr>
<tr>
<td>±0.1 m (with RTK positioning)</td>
<td></td>
</tr>
<tr>
<td>RTK Positioning Accuracy (fixed RTK enabled)</td>
<td>1 cm + 1 ppm (horizontal) 1.5 cm + 1 ppm (vertical)</td>
</tr>
<tr>
<td>Max Angular Velocity</td>
<td>Pitch: 150°/s; Yaw: 100°/s</td>
</tr>
<tr>
<td>Max Tilt Angle</td>
<td>35° (N-mode and forward vision system enabled: 25°)</td>
</tr>
<tr>
<td>Max Ascent/Descent Speed</td>
<td>6 m/s; 5 m/s</td>
</tr>
<tr>
<td>Max Tilt Descent Speed</td>
<td>7 m/s</td>
</tr>
<tr>
<td>Max Horizontal Speed</td>
<td>23 m/s</td>
</tr>
<tr>
<td>Max service ceiling above sea level (without other payloads)</td>
<td>5000 m (with 1671 propellers) 7000 m (with 1676 propellers)</td>
</tr>
<tr>
<td>Max Wind Resistance</td>
<td>12 m/s</td>
</tr>
<tr>
<td>Max Hover Time[2]</td>
<td>35 min</td>
</tr>
<tr>
<td>Max Flight Time[2]</td>
<td>40 min</td>
</tr>
<tr>
<td>Motor Model Number</td>
<td>3511</td>
</tr>
<tr>
<td>Propeller Model Number</td>
<td>1671; 1676 High Altitude (not included)</td>
</tr>
<tr>
<td>GNSS</td>
<td>GPS+Galileo+BeiDou+GLONASS (GLONASS is supported only when RTK module is enabled)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20° to 50° C (-4° to 122° F)</td>
</tr>
<tr>
<td><strong>Gimbal</strong></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Angular Vibration Range</td>
<td>±0.01°</td>
</tr>
<tr>
<td>Controllable Rotation Range</td>
<td>Pan: ±90°, Tilt: -120° to +45°</td>
</tr>
<tr>
<td>Mechanical Range</td>
<td>Pan: ±105°, Tilt: -135° to +60°, Roll: ±45°</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Zoom Camera</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor</td>
<td>1/2&quot; CMOS; Effective Pixels: 48M</td>
</tr>
</tbody>
</table>
| Lens | Focal Length: 21-75 mm (equivalent focal length: 113-405 mm)  
Aperture: f/2.8 - f/4.2  
Focus: 5 m to ∞ |
| Exposure Compensation | ±3 ev (using 1/3 ev as step length) |
| Electronic Shutter Speed | Auto mode:  
Capture mode: 1/8000 - 1/2 s  
Photo: 1/8000 - 1/30 s  
M mode:  
Capture mode: 1/8000 - 8 s  
Photo: 1/8000 - 1/30 s |
| ISO Range | 100-25600 |
| Max. Video Resolution | 3840×2160 |
| Max. Photo Size | 8000×6000 |

<table>
<thead>
<tr>
<th><strong>Wide Camera</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor</td>
<td>1/2&quot; CMOS; Effective Pixels: 12M</td>
</tr>
</tbody>
</table>
| Lens | DFOV: 84°  
Focal Length: 4.5 mm (equivalent focal length: 40 mm)  
Aperture: f/2.8  
Focus: 1 m to ∞ |
| Exposure Compensation | ±3 ev (using 1/3 ev as step length) |
| Electronic Shutter Speed | Auto mode:  
Capture mode: 1/8000 - 1/2 s  
Photo: 1/8000 - 1/30 s  
M mode:  
Capture mode: 1/8000 - 8 s  
Photo: 1/8000 - 1/30 s |
| ISO Range | 100-25600 |
| Max. Video Resolution | 3840×2160 |
| Photo Size | 4000×3000 |

<table>
<thead>
<tr>
<th><strong>Thermal Camera</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Imager</td>
<td>Uncooled VOx Microbolometer</td>
</tr>
</tbody>
</table>
### Lens
- **DFOV:** 61°
- **Focal Length:** 9.1 mm (equivalent focal length: 40 mm)
- **Aperture:** f/1.0
- **Focus:** 5 m to ∞

### Infrared Temperature Measurement Accuracy
- ±2°C or ±2% (using the larger value)

### Video Resolution
- Infrared Image Super-resolution Mode: 1280×1024
- Basic Mode: 640×512

### Photo Size
- Infrared Image Super-resolution Mode: 1280×1024
- Basic Mode: 640×512

### Pixel Pitch
- 12 µm

### Temperature Measurement Method
- Spot Meter, Area Measurement

### Scene Range
- High Gain mode: -20° to 150° C (-4° to 302° F)
- Low Gain mode: 0° to 500° C (32° to 932° F)

### Temperature Alert
- Supported

### Palette
- White Hot/Fulgurite/Iron Red/Hot Iron/Medical/Arctic/Rainbow 1/Rainbow 2/Tint/Black Hot

### FPV Camera
- **Resolution:** 1920×1080
- **DFOV:** 161°
- **Frame Rate:** 30 fps

### Laser Module
- **Wavelength:** 905 nm
- **Max Laser Power:** 3.5 mW
- **Single Pulse Width:** 6 ns

### Measurement Accuracy
- ± (0.2 m + D×0.15%)  
  D is the distance to a vertical surface

### Measuring Range
- 3-1200 m (0.5×12 m vertical surface with 20% reflectivity)

### Vision System
- **Obstacle Sensing Range**
  - Forward: 0.6-38 m
  - Upward/Downward/Backward/Sideward: 0.5-30 m

### FOV
- 67° (H), 53° (V)

### Operating Environment
- Surfaces with clear patterns and adequate lighting (> 15 lux)

### Infrared Sensing System
- **Obstacle Sensing Range:** 0.1-10 m
- **FOV:** 30°
### Operating Environment
Large, diffuse, and reflective obstacles (reflectivity >10%)

### Matrice 30 Series Dock Bundle User Manual

<table>
<thead>
<tr>
<th>TB30 Intelligent Flight Battery</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>5880 mAh</td>
</tr>
<tr>
<td>Voltage</td>
<td>26.1 V</td>
</tr>
<tr>
<td>Battery Type</td>
<td>Li-ion 6S</td>
</tr>
<tr>
<td>Energy</td>
<td>131.6 Wh</td>
</tr>
<tr>
<td>Net Weight</td>
<td>Approx. 685 g</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20° to 50° C (-4° to 122° F)</td>
</tr>
<tr>
<td>Ideal Storage Temperature</td>
<td>20° to 30° C (68° to 86° F)</td>
</tr>
<tr>
<td>Charging Temperature</td>
<td>-20° to 50° C (-4° to 122° F)</td>
</tr>
<tr>
<td></td>
<td>(The battery will initiate self-heating in low-temperature environments, and the air conditioning system will start cooling in high-temperature environments.)</td>
</tr>
<tr>
<td>Chemical System</td>
<td>LiNiMnCoO2</td>
</tr>
</tbody>
</table>

### Auxiliary Lights

| Effective Illumination Distance | 5 m |
| Illumination Type               | 60 Hz, solid glow |

[1] 5.8 and 5.1GHz frequencies are prohibited in some countries. In some countries, the 5.1GHz frequency is only allowed for use indoors.

[2] The maximum flight time was tested in a lab environment and is for reference only.

[3] This protection rating is not permanent and may reduce over time after long-term use due to aging and wear.

[4] The infrared temperature measurement accuracy was tested in a lab environment and is for reference only.
Using Third-Party Payloads

The aircraft provides a PSDK port for connecting a third-party payload and the dock reserves a space inside the cover for storing the third-party payload, which facilitates the expansion of the aircraft operating capabilities.

Third-Party Payload Requirements

- Installing a third-party payload will shorten the flight time and reduce the aircraft wind resistance. Make sure to install the payload as needed.
- The third-party payload should have a protection rating 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.

💡 • Visit https://developer.dji.com/payload-sdk/ for more information about SDK development.

Installation Requirements

- To ensure the stability of the aircraft, use the DJI official original PSDK Mounting Bracket, and install the third-party payload properly according to the user guide. Visit https://www.dji.com/matrice-30/downloads to learn more about the PSDK Mounting Bracket.

- 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 third-party payload must not exceed 80 mm if the height of the PSDK Mounting Bracket is taken into consideration.
- 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 PSDK port by inserting the connector with a waterproof rubber ring. If necessary, seal the PSDK port of the aircraft. As shown below.

⚠️ • Make sure to seal the port properly. If the seal fails and water leaks into the aircraft, it will seriously affect flight safety.
## Troubleshooting List

<table>
<thead>
<tr>
<th>Description</th>
<th>Possible Cause</th>
<th>Troubleshooting</th>
</tr>
</thead>
</table>
| The aircraft does not take off after the flight task is launched. | • Wind speed is above 12 m/s.  
• In heavy rainfall.  
• Environment temperature is below -20° C (-4° F).  
• One of the Emergency Stop Buttons is pressed.  
• The aircraft RTK is not enabled.  
• The aircraft satellite signal is weak (the aircraft satellite icon in DJI FlightHub 2 is red). | • View the warning message on the device status window in DJI FlightHub 2, click the message to view warning details, and follow the instructions to conduct device debugging. |
| The aircraft does not charge after landing in the dock. | • The battery is cooling down or warming up.  
• The charging ports of the aircraft have poor contact with the dock.  
• Dock failure or aircraft failure.  
• The dock cover is opened.  
• There is still a task in progress. | • The charging temperate range of the battery is 10° to 44° C (50° to 111.2° F). Charging will begin after the battery temperature reaches the charging temperature range.  
• Enable remote debugging and try to push or pull the driving rods. Contact DJI authorized service provider if the issue persists.  
• Enable remote debugging and restart the dock.  
• Close the dock cover and try charging again.  
• Wait for execution timeout until no task is in progress, and try charging again. |
| The Live button on DJI FlightHub 2 is gray and cannot be clicked. | • The wind speed gauge is not connected. | • Make sure the wind speed gauge is firmly installed. |
| The device shows offline on DJI FlightHub 2. | • Dock network connection failure.  
• The dock power supply is abnormal and the backup battery level is zero.  
• The dock is switched to a third-party cloud platform.  
• Dock failure. | • Make sure the dock is connected to the internet.  
• Make sure the power supply is normal.  
• Make sure the cloud platform of the dock remains the same.  
• Contact a DJI authorized service provider for device maintenance. |
FAR Remote ID Compliance Information

The aircraft complies with the requirements of 14 CFR Part 89:

- The aircraft automatically initiates a pre-flight self-test (PFST) of the Remote ID system before takeoff and cannot take off if it does not pass the PFST\(^1\). The results of the PFST of the Remote ID system can be viewed in a DJI flight control app such as DJI Pilot 2 or in a DJI cloud platform such as DJI FlightHub 2.

- The aircraft monitors the Remote ID system functionality from pre-flight to shut down. If the Remote ID system malfunctions or has a failure, an alarm will be displayed in a DJI flight control app such as DJI Pilot 2 or in a DJI cloud platform such as DJI FlightHub 2.

- The user shall keep the DJI flight control app running in the foreground and always allow it to obtain the location information of the remote controller when using the DJI flight control app to fly the aircraft.

- Developers who develop third-party applications based on the DJI Mobile SDK shall obtain and display the PFST results and the failure status of the Remote ID system during operation by calling specific APIs\(^2\).

- Developers who develop third-party platforms based on the DJI Cloud API shall obtain and display the PFST results and the failure status of the Remote ID system during operation by calling specific APIs\(^3\).

\(^1\) The pass criterion for PFST is that the hardware and software of the Remote ID required-data source and transmitter radio in the Remote ID system are functioning properly.

\(^2\) For detailed APIs information, please visit https://developer.dji.com/mobile-sdk/

\(^3\) For detailed APIs information, please visit https://developer.dji.com/cloud-api/
WE ARE HERE FOR YOU

Contact
DJI SUPPORT

※ The content is subject to change without prior notice.
Download the latest version from

https://www.dji.com/dock/downloads

If you have any questions about this document, contact DJI by sending a message to DocSupport@dji.com.

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