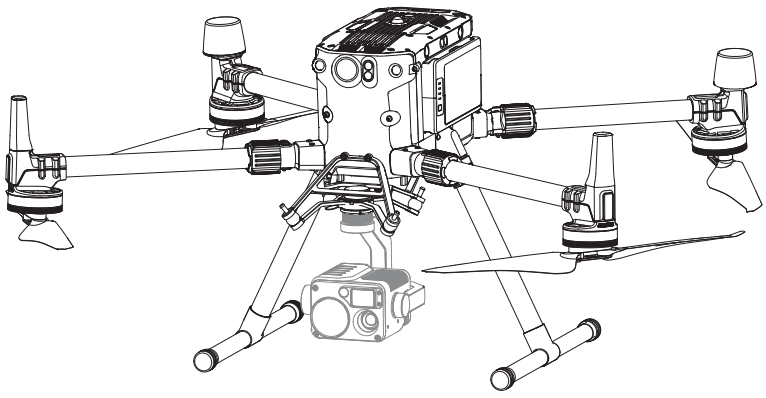
MATRICE 300 RTK

Quick Start Guide
快速入门指南
快速入門指南
クイックスタートガイド
퀵 스타트 가이드
Kurzanleitung
Guía de inicio rápido
Guide de démarrage rapide
Guida di avvio rapido
Snelstartgids
Guia de início rápido
Guia de Início Rápido
Краткое руководство пользователя

v1.0



Contents

Matrice 300 RTK

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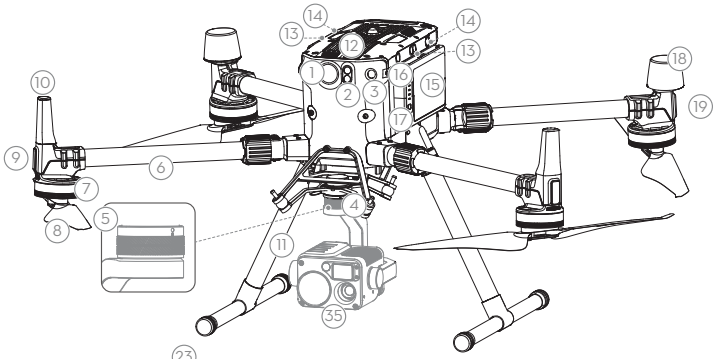
The MATRICE™ 300 RTK (M300 RTK) is a powerful industrial drone platform with an advanced flight controller system, 6 Directional Sensing and Positioning system and FPV camera. To enhance reliability and safety, it also supports CSM Radar - an additional obstacle detection component that can be mounted on top of the drone. It features several advanced flight functions including return-to-home, obstacle sensing, AI spot-check and more.* The built-in AirSense provides awareness of nearby aircraft within the surrounding airspace to ensure safety.

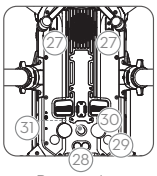
Its airframe design gives it an IP44 Ingress Protection, in accordance with the global IEC 60529 standard. The mechanical design, along with quick-release landing gears and mounted folding arms, makes it easy to transport, store, and prepare for flight. The safety beacons on both the top and the bottom of the aircraft allow the aircraft to be identified at night or in low light conditions. The auxiliary lights help the vision positioning system achieve better performance at night or in low light conditions, improving aircraft takeoff, landing and flight safety.

M300 RTK is compatible with many of DJI's DGC2.0 connector gimbals, supporting multi-gimbal system, which can support up to three independent gimbals to meet the needs of different scenarios.**

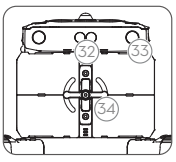
It is equipped with many expansion ports to broaden its applications. The M300 RTK has a built-in DJI™ D-RTK™ 2, which provides more accurate heading data for positioning.** An advanced power management system along with dual batteries ensures power supply and enhances flight safety. Without a payload, the M300 RTK has a hover time of up to 50 minutes with standard batteries. ***



Top view



Bottom view



Rear view

1. FPV Camera
2. Forward Infrared Sensing System
3. Forward Vision System
4. DJI Gimbal Connector v2.0 (DGC2.0)
5. Gimbal Detachment Button
6. Frame Arms
7. Motors
8. Propellers
9. ESC LEDs
10. Transmission Antennas
11. Landing Gears
12. Air Filter
13. Left and Right Infrared Sensing System
14. Left and Right Vision System
15. Intelligent Flight Batteries
16. Battery Level Indicators
17. Battery Level Button
18. D-RTK Antennas
19. Aircraft Status Indicators
20. Upward Beacon
21. Power Button / Indicator
22. Upward Infrared Sensing System
23. Top Auxiliary Light
24. Upward Vision System
25. Assistant Port
26. OSDK Port
27. PSDK Port
28. Downward Infrared Sensing System
29. Downward Vision System
30. Bottom Auxiliary Light
31. Downward Beacon
32. Backward Infrared Sensing System
33. Backward Vision System
34. Battery Locker
35. Gimbal and Camera (Excluded)

* Must be used with the specified gimbal and camera.

** The Vision and Infrared Sensing Systems are affected by surrounding conditions. Read the Disclaimer and Safety Guidelines to learn more. Gimbals can be purchased separately from the official DJI website. Please refer to the user manual for more details about expansion ports, upward gimbals, and downward gimbals.

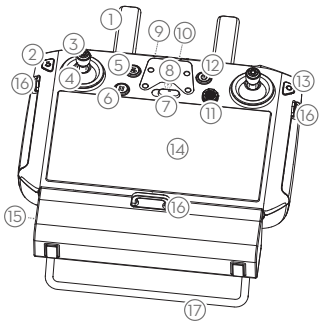
*** Please note that maximum flight time is measured in ideal flight conditions. Actual flight time may vary depending on your environment.

• DO NOT disassemble the aircraft shell, otherwise it will not be covered under warranty.

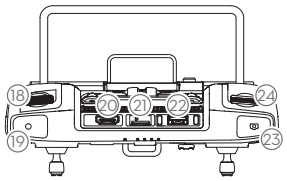
DJI Smart Controller Enterprise

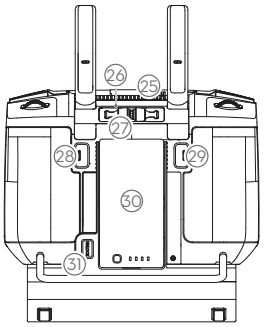
The DJI Smart Controller Enterprise (hereinafter referred to as “Smart Controller”) features OCUSYNC™ Enterprise technology, capable of controlling aircraft that supports this technology, and providing a live HD view from the aircraft's camera. It can transmit image data at distances of up to 6.21 mi (10 km) and comes with a number of aircraft and gimbal controls as well as some customizable buttons. *

The built-in 5.5-inch high brightness 1000 cd/m² screen has a resolution of 1920×1080 pixels, featuring an Android system with multiple functions such as Bluetooth and GNSS. In addition to supporting Wi-Fi connectivity, it is also compatible with other mobile devices for more flexible usage. The Smart Controller has a maximum working time of 2.5 hours with the built-in battery. When using the WB37 Intelligent Battery, the maximum working time can be extended to 4.5 hours. **



1. Antennas
2. Back Button / Function Button
3. Control Sticks
4. Stick Covers
5. RTH Button
6. Flight Pause Button
7. Flight Mode Switch
8. Position for Mounting Bracket (with built-in GPS module under it)
9. Status LED
10. Battery Level LEDs
11. 5D Button
12. Power Button
13. Confirm Button / Customizable Button C3
14. Touch Screen
15. Charging Port (USB-C)
16. Lanyard Hooks
17. Handle
18. Gimbal Pitch Control Dial
19. Record Button
20. HDMI Port
21. microSD Card Slot
22. USB-A Port
23. Focus / Shutter Button





24. Gimbal Pan Control Dial
25. Air Vent
26. Sticks Storage Slot
27. Spare Sticks
28. Customizable Button C2
29. Customizable Button C1
30. WB37 Intelligent Battery
31. Battery Release Button

* The Smart Controller can reach its maximum transmission distance (FCC) in an unobstructed area with no electromagnetic interference at an altitude of about 400 feet (120 meters). The actual maximum transmission distance may be less than the distance mentioned above due to interference in the operating environment, and the actual value will fluctuate according to the strength of interference.

** Maximum operating time is estimated in a lab environment at room temperature, for reference only. When the Smart Controller is powering other devices, the run time will be diminished.

Using Matrice 300 RTK

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1. Downloading the DJI Pilot App

Users can access the DJI Pilot app that is built-in to the Smart Controller's Touch Screen.

On a mobile device, users can also search for DJI Pilot in Google Play Store or scan the QR code to download the app onto your mobile device, and then connect the mobile device to the Smart Controller.

DJI Pilot App

Internet First-time activation requires your DJI account and an internet connection.

- DJI Pilot supports Android 5.0 or later.

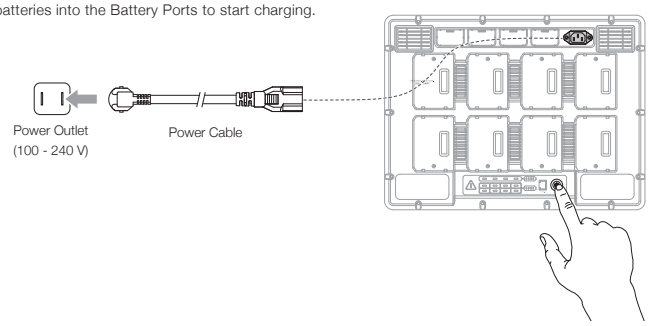
2. Charging the Batteries

TB60 Intelligent Flight Battery and WB37 Intelligent Battery

① Connect the Battery Station to a power outlet (100 - 240 V, 50 - 60 Hz) via the AC power cable.

② Press the Power Button once to turn on the Battery Station.

③ Insert the batteries into the Battery Ports to start charging.

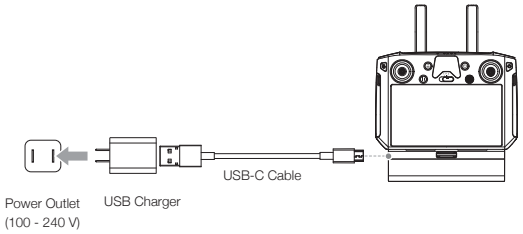


- For TB60 Intelligent Batteries, the Battery Station will charge the two batteries with the most amount of remaining battery power first.
- For WB37 Batteries, the Battery Station will charge the battery with the highest remaining battery power first.
- When the temperature of the battery is too low, it will warm up automatically before charging.

- Refer to the Battery Station User Guide for more information about the various LEDs.

Smart Controller

It takes roughly 2 hours and 15 minutes to fully charge the Smart Controller using the standard USB charger.

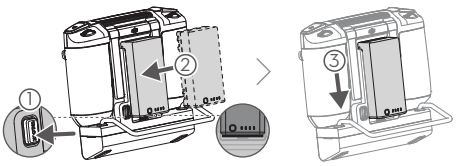


- Please use the official USB Charger to charge the Smart Controller. When a standard USB Charger is not available, it is recommended to use an FCC / CE certified USB power adapter rated 12 V / 2 A.
- Please recharge the battery at least every three months to prevent over discharging - the battery will deplete when stored for an extended period.

3. Preparing the Smart Controller

Mounting the WB37 Intelligent Battery

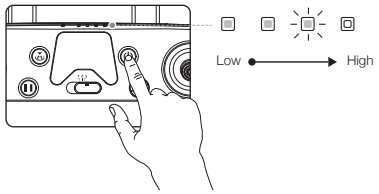
① Press and hold the battery release button.
② Insert the Intelligent Battery into the battery compartment. Make sure the bottom of the battery is aligned to the marking line in the compartment.
③ Push the battery to the bottom.



- To remove the Intelligent Battery, press and hold the battery release button, then push the battery upward.
- Refer to the BS60 Intelligent Battery Station User Guide for Intelligent Battery charging details.

Checking the Battery Level and Turning On

Check the internal battery level according to the Battery Level LEDs. Press the power button once to check it while turned off.
Press the power button once, press again and hold for a few seconds to turn on / off the Smart Controller.

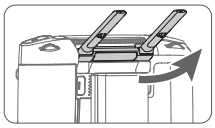


Please refer to the user manual for more details about checking the internal and external battery levels.

When using external WB37 Intelligent Battery, it is still necessary to make sure that the internal battery has some power. Otherwise, the Smart Controller cannot be turned on.

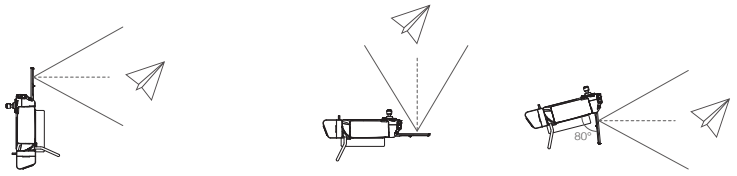
Adjusting the Antennas

Lift the antennas and adjust them. The strength of the Smart Controller signal is affected by the position of the antennas. When the angle between the antennas and the back of the Smart Controller is 80° or 180°, the connection between the Smart Controller and aircraft can reach its optimal performance.



Optimal Transmission Zone

Try to keep the aircraft inside the optimal transmission zone. If the signal is weak, adjust the antennas or fly the aircraft closer.



- Avoid using wireless devices that use the same frequency bands as the Smart Controller.
- In real operation, the DJI Pilot app will issue a prompt to warn that the transmission signal is weak, and please adjust the antennas to ensure that the aircraft is back to the optimal transmission range.

4. Preparing the Aircraft

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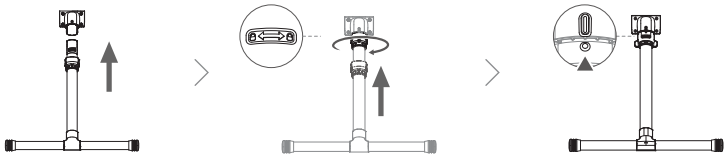
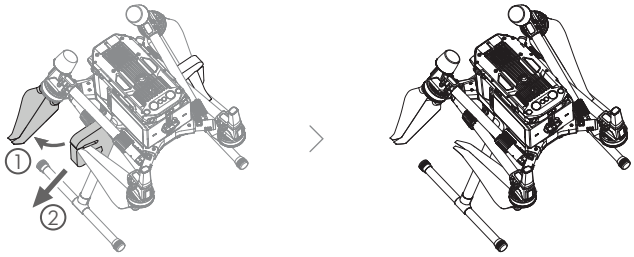
Installing the Landing Gears

Install the landing gears, slide the gear lock to the end of the landing gear, then rotate it about 90° until the dot is in sync with the alignment mark.

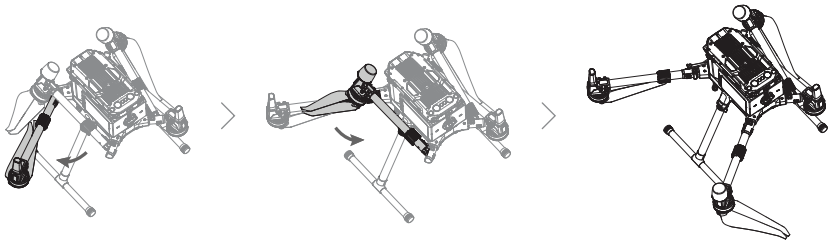


Unfolding the Aircraft

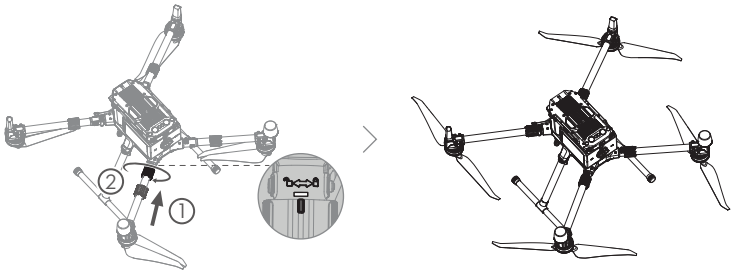
Remove the two propeller holders.



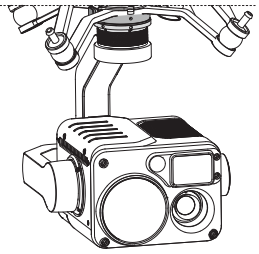
Unfold the frame arms on both sides in the same way.



Lock the frame arms and unfold the propellers.



Mounting the Gimbal and Camera



Press the Gimbal Detachment button to remove the cover.

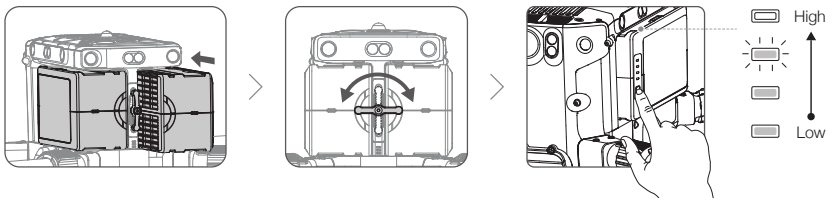
Align the white and red dots and insert the gimbal.

Rotate the gimbal lock to the locked position.

- Make sure to press down the Gimbal Detachment button when rotating the gimbal lock to remove the gimbal and camera. The gimbal lock should be fully rotated when removing the gimbal for the next installation.

Mounting the Intelligent Flight Batteries / Checking the Battery Level

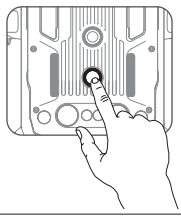
Insert a pair of batteries.
Press the battery level button once to check the battery level.



Turning On the Aircraft

Turn on / off: Press the power button on the aircraft, within 3 seconds press again and hold to turn on / off the aircraft, with the power indicator solid on.

Link: Press and hold the aircraft's power button at least five seconds to link the aircraft and Smart Controller. The power indicator will blink during linking.



5. Flight

Before taking off, make sure the Aircraft Status Bar in the DJI Pilot app displays “Ready to Go (GPS)” or “Ready to Go (RTK)”.

Ready to Go (GPS)

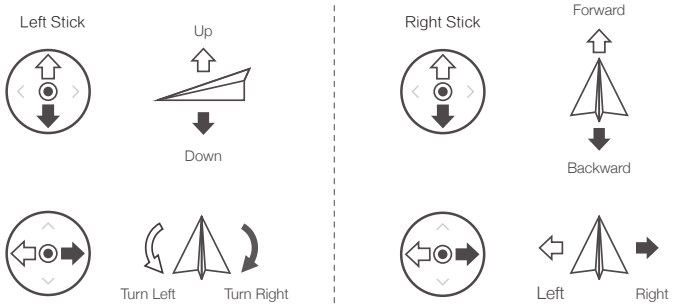
Manual Takeoff / Landing

Combination Stick Command to start / stop the motors.

Slowly push the left stick up to take off. (Mode 2)

Slowly push the left stick down until the aircraft lands. Hold for a few seconds to stop the motors.

The default flight control is known as Mode 2. The left stick controls the aircraft's altitude and heading, while the right stick controls its forward, backward, and left and right movements.



- The motors can only be stopped mid-flight when the flight controller detects a critical error.
- Be sure the Smart Controller is linked to the aircraft.

Specifications

- **Aircraft**

Dimensions (Unfolded, propellers excluded)	810×670×430 mm (L×W×H)
Dimensions (Folded)	430×420×430 mm (L×W×H)
Diagonal Wheelbase	895 mm
Weight (Batteries excluded)	3600 g
Max Payload	2700 g
Max Takeoff Weight	9000 g
Operating Frequency	2.400 - 2.4835 GHz; 5.725 - 5.850 GHz
Transmitter Power (EIRP)	2.400 - 2.4835 GHz: 26.7 dBm (FCC); 18.7 dBm (CE); 18.5 dBm (SRRC); 18.5 dBm (MIC) 5.725 - 5.850 GHz: 26.3 dBm (FCC); 12.6 dBm (CE); 28.5 dBm (SRRC)
Hovering Accuracy (Windless or breezy)	Vertical: ±0.1 m (Vision System enabled)) ±0.5 m (P-mode with GPS) ±0.1 m (D-RTK) Horizontal: ±0.3 m (Vision System enabled)) ±1.5 m (P-mode with GPS) ±0.1 m (D-RTK)
Max Angular Velocity	Pitch: 300°/s, Yaw: 100°/s
Max Pitch Angle	30° (P-mode and Forward Vision System enabled: 25°)
Max Ascent Speed	6 m/s
Max Descent Speed (vertical)	5 m/s
Max Descent Speed (tilt)	7 m/s
Max Horizontal Speed	23 m/s
Max Service Ceiling Above Sea Level	5000 m (with 2110 Propellers) / 7000 m (with 2195 High Altitude Low Noise Propellers)
Max Wind Resistance	12 m/s
Max Hover Time (Sea level)	> 40 minutes (Load weight 820 g)
Motor Model	6009
Propeller Model	2110
Supported DJI Gimbals	Zenmuse XT2 / XT S / Z30 / H20 / H20T
Supported Gimbal Configurations	Dual Downward Gimbals, Single Upward Gimbal, Single Downward Gimbal
Other Supported DJI Products	CMS Radar, Manifold 2
Ingress Protection Rating	IP44
GNSS	GPS+GLONASS+BeiDou+Galileo
Operating Temperature	-20° to 50°C (-4° to 122° F)

• **Smart Controller**	
OcuSync Enterprise Operation Frequency Range	2.400 - 2.4835 GHz; 5.725 - 5.850 GHz*
Max Transmission Distance (Unobstructed, free of interference)	2.400 - 2.4835 GHz: 10 km (FCC); 4 km (CE); 4 km (SRRC); 4 km (MIC) 5.725 - 5.850 GHz: 8 km (FCC); 2 km (CE); 5 km (SRRC)
Transmitter Power (EIRP)	2.400 - 2.4835 GHz: 29.5 dBm (FCC); 18.5 dBm (CE) ; 18.5 dBm (SRRC); 18.5 dBm (MIC) 5.725 - 5.850 GHz: 28.5 dBm (FCC); 12.5 dBm (CE); 20.5 dBm (SRRC)
External Battery	Name: WB37 Intelligent Battery Capacity: 4920 mAh; Voltage: 7.6 V Battery Type: LiPo; Energy: 37.39 Wh Charge Time (Using BS60 Intelligent Battery Station): 70 min (15° to 45° C); 130 min (0° to 15° C)
Built-in Battery	Battery Type: 18650 Li-ion (5000 mAh @ 7.2 V) Charge Type : Supports USB charger rated 12 V / 2 A Rated Power: 17 W** Charge Time: 2 hours and 15 minutes (Using a USB charger rated 12 V / 2 V)
Working Time**	Built-in Battery: Approx. 2.5 hours Built-in Battery + External Battery: Approx. 4.5 hours
Power Supply Voltage / Current (USB-A port)	5 V / 1.5 A
Operation Temperature Range	-20° to 40° C (-4° to 104° F)
• **Vision System**	
Obstacle Sensing Range	Forward / Backward / Left / Right: 0.7 - 40 m Upward / Downward: 0.6 - 30 m
FOV	Forward / Backward / Downward: 65°(H), 50°(V) Left / Right / Upward: 75°(H), 60°(V)
Operating Environment	Surfaces with clear patterns and adequate lighting (> 15 lux)
• **Infrared Sensing System**	
Obstacle Sensing Range	0.1 - 8 m
FOV	30°
Operating Environment	Large, diffuse, and reflective obstacles (reflectivity >10%)
• **Intelligent Flight Battery**	
Capacity	5935 mAh
Voltage	52.8 V
Battery Type	LiPo 12S
Energy	274 Wh
Net Weight (Single One)	Approx. 1.35 kg
Operating Temperature	-4° to 122°F (-20° to 50°C)
Storage Temperature	71.6° to 86°F (22° to 30°C)
Charging Temperature	41° to 104°F (5° to 40°C)
Max Charging Power	470 W
• **Auxiliary Light**	
Effective Illumination Distance	5 m
Illumination Mode	60 Hz, solid on
• **FPV Camera**	
Resolution	960p
FOV	145°
Frame rate	30fps

* Local regulations in some countries prohibit the use of the 5.8 GHz and 5.2 GHz frequencies and in some regions the 5.2 GHz frequency band is only allowed for indoor use.

** The Smart Controller will supply power for the mobile device installed, which may affect the above-mentioned specifications.

For more information, read the user manual:
https://www.dji.com/matrice-300

※ This content is subject to change without prior notice.