



# dji Phantom 4 RTK Compact Mapping Drone User Guide

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## Phantom 4 RTK (SDK) Quick Start Guide



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## Phantom 4 RTK

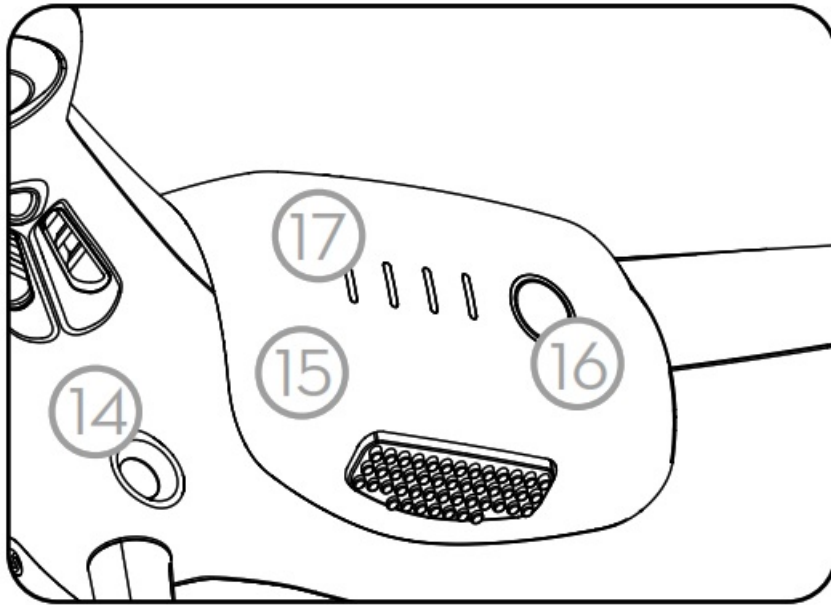
The Phantom 4 RTK is a smart mapping and imaging drone capable of highly accurate mapping functions. The aircraft has a built-in DJITM Onboard D-RTK\*, which provides precision data for centimeter-level positioning accuracy. Multi-directional obstacle sensing is enabled by forward, rear, and downward vision and infrared sensors\*. The camera features a 1-inch 20-megapixel CMOS sensor housed within a high stability gimbal. When it comes to mapping, the high-performance mechanical shutter eliminates rolling shutter distortion when capturing images at speed. Image data can be used to generate maps for field planning when operating a DJI AGRAS<sup>TM</sup> aircraft. Users can also import photos to the DJI TERRA<sup>TM</sup> application third-party mapping software to composite highly accurate maps for different applications.


The Phantom 4 RTK uses 9455S low-noise propellers to reduce noise and improve efficiency.



1. Gimbal and Camera
2. Downward Vision System
3. Micro USB Port
4. Camera/Linking Status Indicator and Link Button
5. Camera microSD Card Slot
6. Forward Vision System
7. Infrared Sensing System
8. Front LEDs

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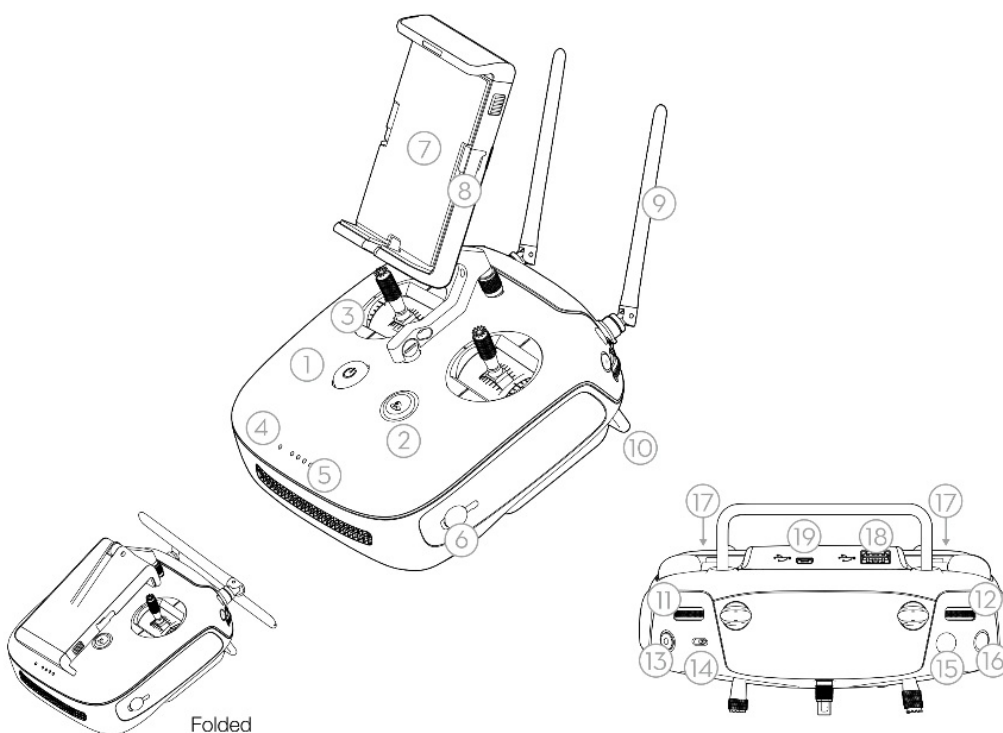


-  **DO NOT** use a mix of 9455S and 9450S propellers.

\* This should be used with Network RTK service, a DJI D-RTK 2 High Precision GNSS Mobile Station (purchased additionally) or post-processed kinematic (PPK) data (recommended when RTK signal is weak during operation). The Vision and Infrared Sensing Systems are affected by surrounding conditions. Read the User Manual to learn more.

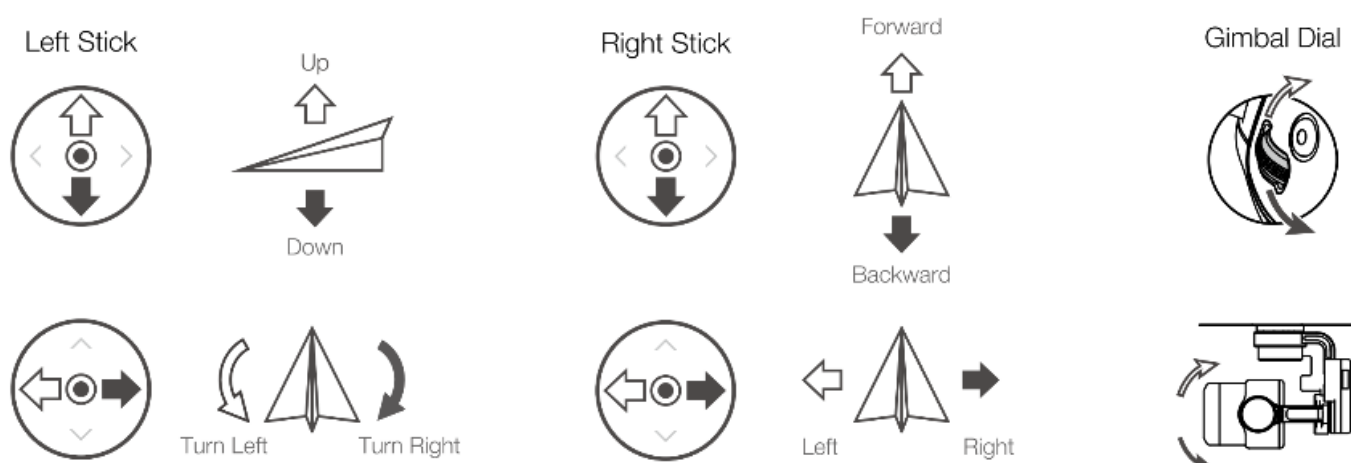
## Remote Controller

The remote controller features DJI's long-range transmission technology OcuSync which is capable of controlling the aircraft and the gimbal camera at a maximum transmission range of 4.3 mi (7 km)\*. A mobile device can be connected to the remote controller via the USB port to use the DJI Pilot app (for Android), GS Pro (for iOS), or a third-party app developed using the DJI Mobile SDK\*. The maximum remote controller battery life is approximately 6 hours\*.



1. Power Button 2. Return to Home (RTH) Button 3. Control Sticks 4. Status LED 5. Battery Level LEDs 6. Power Port 7. Mobile Device Holder 8. Small Device Positioning Tabs (for mobile phones) 9. Antennas	1. Power Button 2. Return to Home (RTH) Button 3. Control Sticks 4. Status LED 5. Battery Level LEDs 6. Power Port 7. Mobile Device Holder 8. Small Device Positioning Tabs (for mobile phones) 9. Antennas
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The figure below shows the function that each control stick movement performs, using Mode 2 as an example. The left stick controls the aircraft's altitude and heading, while the right stick controls its forward, backward, left, and right movements. The gimbal dial controls the camera's tilt.





\* The remote controller is able to reach its maximum transmission distance (FCC) in a wide-open area with no Electro- Magnetic Interference, and at an altitude of about 400 feet (120 meters). Visit the DJI Developer website for more information about the DJI Mobile SDK. <https://developer.dji.com/mobile-sdk>. The maximum runtime is tested under a laboratory environment, only for your reference. Pictures will only be taken when the shutter button is fully pressed.

## 1. Download DJI Mobile Apps or DJI Assistant 2

When using your Phantom 4 RTK for the first time, activate it using the DJI Pilot app, DJI GS Pro or DJI ASSISTANT 2. Ensure that your mobile device or computer has access to the Internet.

Scan the QR code to download the app on your mobile device.

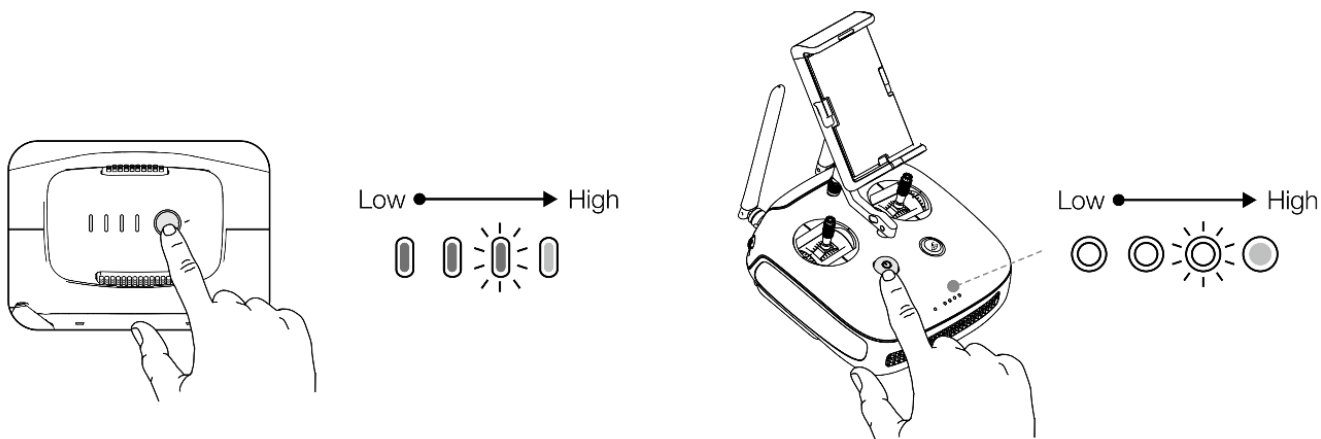
 <p>DJI Pilot</p>	 <p>DJI GS Pro</p>
<a href="http://m.dji.net/djipilot_enterprise">http://m.dji.net/djipilot_enterprise</a>	<a href="https://itunes.apple.com/app/dji-gs-pro/id1">https://itunes.apple.com/app/dji-gs-pro/id1</a>

If using a third-party app, download DJI Assistant 2 from the official DJI website on your computer, and then

connect the aircraft to the computer to activate. <https://www.dji.com/phantom-4-rtk/info#downloads>

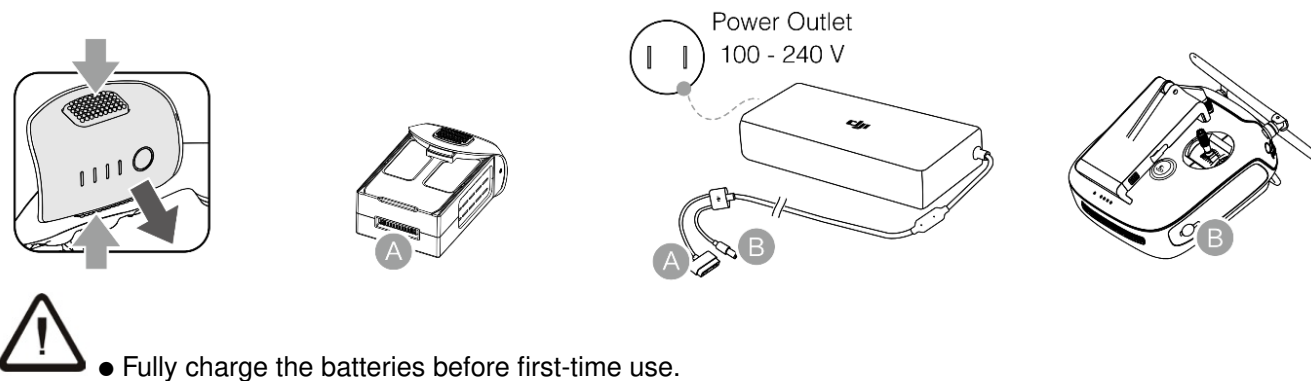
\* Visit the official DJI website for more information about DJI GS Pro. <https://www.dji.com/ground-station-pro>

## 2. Check Battery Levels

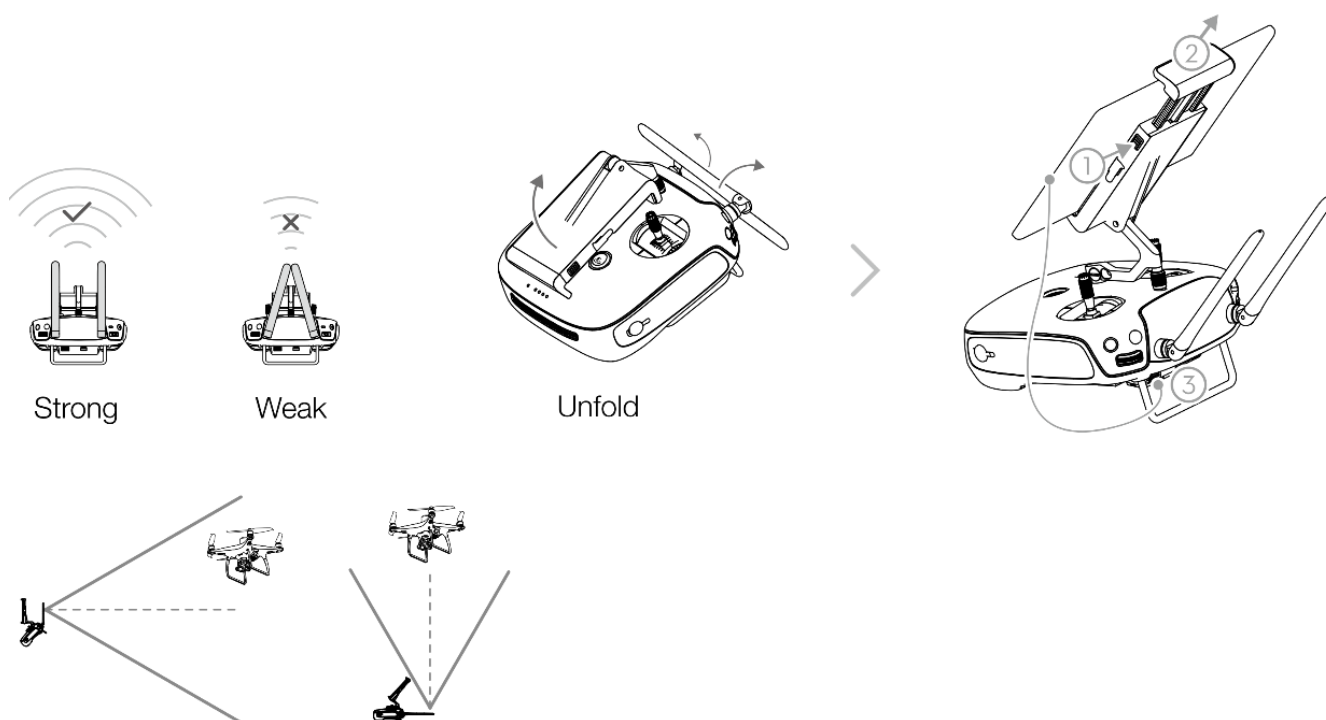


Press once to check the battery level. Press once, then again and hold to turn on/off.

## 3. Charge the Batteries



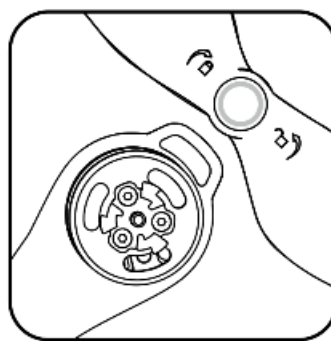
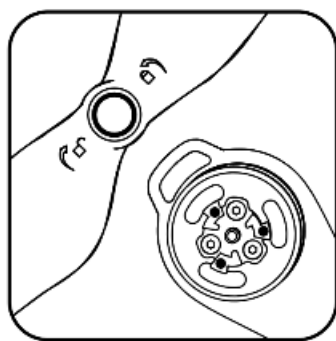
## 4. Prepare the Remote Controller



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.

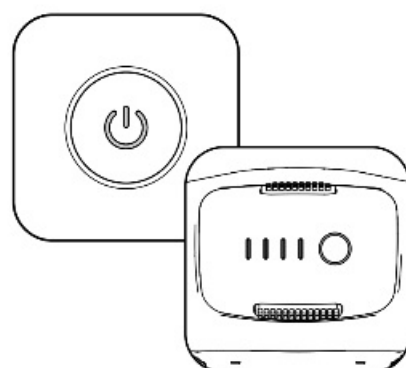
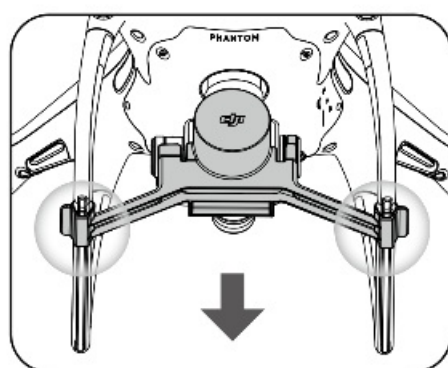
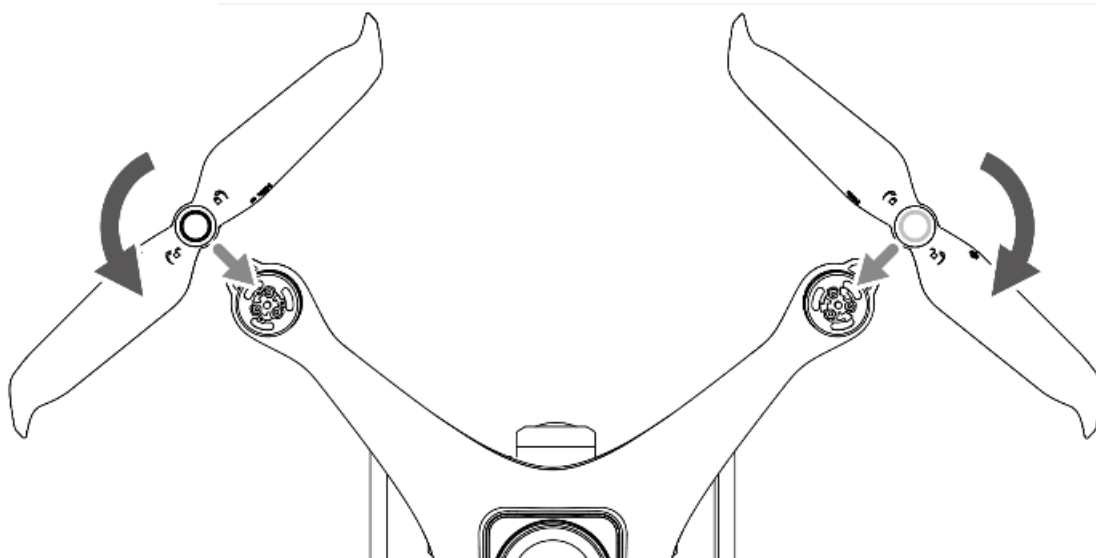
## 5. Prepare for Takeoff



Black propeller rings go on motors with black dots.

Silver propeller rings go on motors without black dots.

Press the propeller down until secure

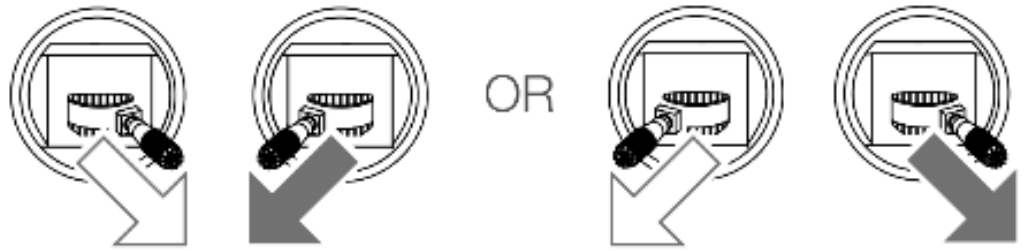


Remove the gimbal clamp from the camera.

Power on the remote controller and the aircraft.

## 6. Flight

For a safe take-off, make sure that the Aircraft Status Indicators blink green slowly (using RTK\* or GNSS for positioning).



Combination Stick Command to start/stop the motors

Combination Stick Comm



- Spinning propellers can be dangerous. Stay away from spinning propellers and motors. DO NOT start the motors in confined spaces or when there are people nearby.
- Always keep your hands on the remote controller when the motors are spinning.
- Stopping motors mid-flight: Perform the CSC to stop the motors. It can be enabled in a DJI app or through DJI Mobile SDK (support coming soon, requires a selection in the third-party app). Only stop motors mid-flight in emergency situations when doing so can reduce the risk of damage or injury.

\* RTK positioning is recommended. If using the DJI Pilot app, go to Camera View > ●●● > RTK to enable Aircraft RTK and select a method for receiving RTK signals. If using the Mobile SDK, refer to SDK documents on RTK configuration.

#### In the DJI Pilot App

Manual Flight



Waypoint



Mapping



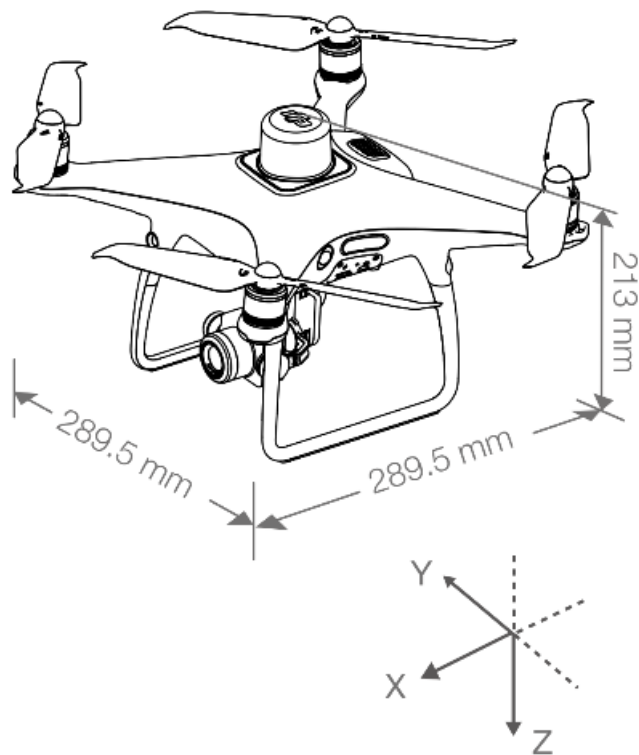
Oblique



## Specifications

- **Aircraft**

Weight (Battery & Propellers Included)	1391 g
Max Service Ceiling Above Sea Level	19685 ft (6000 m) 6 m/s (auto)
Max Ascent Speed	3 m/s 31 mph (50 kph) (P-mode)
Max Descent Speed	2° to 104° F (0° to 40° C) 2.4
Max Speed	GHz to 5.850 GHz (Other countries)
Max Flight Time	5.8 GHz: < 26 dBm (FCC / S
Operating Temperature	Vertical: ±0.1 m; Horizontal: ±0.1
Operating Frequency	RTK disabled: Vertical: ±0.1 m (wi
Transmitter Power (EIRP)	oning) Horizontal: ±0.3 m (wi
Hover Accuracy Range	) Image Position Offset The p
Image Position Offset	center of the onboard D-RTK
	92 mm) already applied to the
	nd z axes of the aircraft body
	e aircraft, respectively.



• GNSS

Single-Frequency High-Sensitivity GNSS	GPS+GLONASS Frequency Us
Multi-Frequency Multi-System High-	GPS: L1/L2; GLONASS: L1/L2;
Precision RTK GNSS	First-Fixed Time: < 50 s Positio
	Horizontal 1 cm + 1 ppm (RMS)
	er 1 km of movement. Velocity

• Mapping Functions



Mapping Accuracy*	Mapping accuracy meets the requirements for Digital Orthophotos Class III (H/36.5) cm/pixel, H indicates 1 (unit: m)
Ground Sample Distance (GSD)	Max operating area of approx. e., GSD is approx.
Acquisition Efficiency	5 cm/pixel, meeting the requirements for Digital Orthophotos Class III).

- Gimbal

Controllable Range	Pitch: -90° to +30°
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- Vision System

Velocity Range	≤ 31 mph (50 kph) at 6.6 ft (2
Altitude Range	0 – 33 ft (0 – 10 m)
Operating Range	0 – 33 ft (0 – 10 m)
Obstacle Sensory Range	2 – 98 ft (0.7 – 30 m)
Operating Environment	Surfaces with clear patterns a

- Infrared Sensing System

Obstacle Sensory Range	0.6 – 23 ft (0.2 – 7 m)
Operating Environment	Surface with diffuse reflection humans, etc.)

- Camera

Sensor	1" CMOS; Effective pixels: 20
Lens	FOV (Field of View) 84°, 8.8 m auto focus
ISO Range	at 1 m – ∞
Mechanical Shutter	Video: 100 – 3200 (Auto), 100
Electronic Shutter	12800 (Manual)
Max Image Size	8 – 1/2000 s
Video Recording Modes	8 – 1/8000 s
Photo	4864×3648 (4:3); 5472×3648
Video	H.264, 4K: 3840×2160 30p
Supported File Systems	JPEG
Supported SD Cards	MOV
Operating Temperature	FAT32 (≤ 32 GB); exFAT (> 32 microSD, Max Capacity: 128 GB 32° to 104° F (0° to 40° C)

• Remote Controller

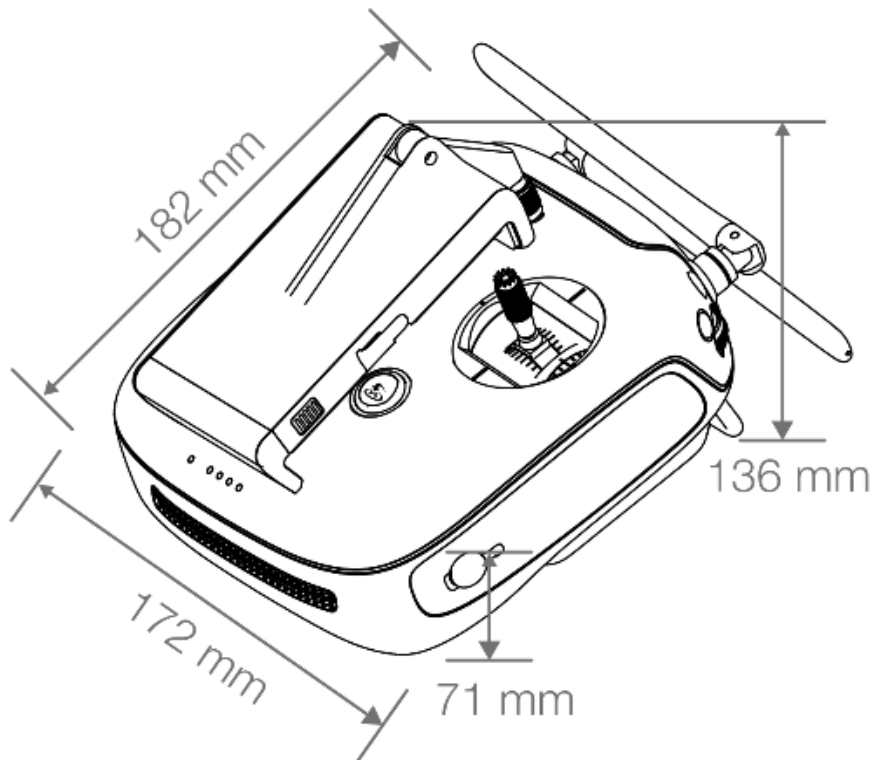
Operating Frequency	2.400 GHz to 2.483 GHz (Europe)
Transmitter Power (EIRP)	5.725 GHz to 5.850 GHz (Other Regions)
Max Transmission Distance	2.4 GHz: < 20 dBm (CE / MICROWAVE) / FCC / NCC: 4.3 mi (7 km); CE (Unobstructed, free of interference)
Built-in Battery	6000 mAh LiPo 2S
Operating Voltage	1.2 A @ 7.4 V
Mobile Device Holder	Tablets and smartphones
Operating Temperature	32° to 104° F ( 0° to 40° C)

• Intelligent Flight Battery (PH4-5870mAh-15.2V)

Capacity	5870 mAh
Voltage	15.2 V
Battery Type	LiPo 4S
Energy	89.2 Wh
Net Weight	468 g
Operating Temperature	14° to 104° F (-10° to 40° C)
Max Charging Power	160 W

• AC Power Adapter

Voltage	17.4 V
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\* The actual accuracy depends on surrounding lighting and patterns, aircraft altitude, mapping software used, and other factors when shooting.

Download the user manual for more information: <http://www.dji.com/phantom-4-rtk>


✳ This Quick Start Guide is subject to change without prior notice.

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[www.dji.com](http://www.dji.com)

## Documents / Resources

<p>PHANTOM 4 RTK (SDIO)</p> <p>Quick Start Guide Phantom 4 RTK v1.0 (2022.05.01)</p> <p>© 2022 DJI DJI is a trademark of DJI.</p>  <p>dji</p>	<p><a href="#">dji Phantom 4 RTK Compact Mapping Drone</a> [pdf] User Guide</p> <p>Phantom 4 RTK Compact Mapping Drone, Compact Mapping Drone, Mapping Drone, Drone, Phantom 4 RTK</p>
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[Manuals+](#).