



# OVERVIEW OF MATRICE 350 RTK

**PREPARED BY:**

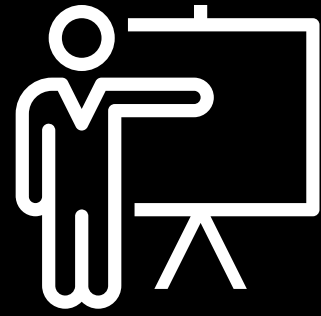
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# INTRODUCTION



The Matrice 350 RTK is designed with a six-directional binocular vision system and an infrared sensing system for six-directional awareness, positioning, and obstacle-sensing capabilities, providing comprehensive protection during flight.

An upgraded flagship drone platform, the Matrice 350 RTK sets a new benchmark for the industry. This next-generation drone platform features an all-new video transmission system and control experience, a more efficient battery system, and more comprehensive safety features, as well as robust payload and expansion capabilities. It is fully powered to inject innovative strength into any aerial operation.

Matrice 350 RTK adopts DJI O3 Enterprise Transmission, which supports triple-channel 1080p HD live feeds, [5] and a max transmission distance of 20 km. [6] Both the aircraft and the remote controller have a four-antenna transceiver system, which can intelligently select the two optimal antennas to transmit signals, while the four antennas receive signals simultaneously. In this way, anti-interference capabilities are significantly improved, and transmission stability is optimized.

# WHAT'S *in the box*



Aircraft  
× 1



DJI RC Plus  
× 1



WB37 Intelligent  
Battery  
× 1



TB65 Intelligent Flight  
Battery  
× 2



Carrying Case  
× 1



BS65 Intelligent  
Battery Station  
× 1



Landing Gear  
× 2



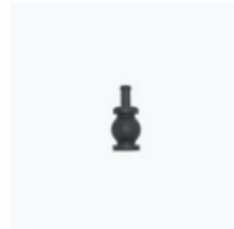
Matrice 350 RTK 2110s  
Propellers (Pair)  
× 1



Screws and Tools  
× 1



Cleaning Tools  
× 1



Spare Gimbal Damper  
× 4



Rubber Port Cover  
(Set)  
× 1

# WHAT MAKES MATRICE 350 RTK BETTER

## 1 A BETTER CONTROLLER

One of the major issues I had with the DJI M300 RTK was the DJI Pilot 2 controller. There's nothing wrong with it; it's just it's small, has a small screen, and you may have to strain a bit to see objects on the screen, especially when using the drone for search and rescue or surveillance. DJI solves this by making the DJI M350 RTK use the DJI RC Plus, which is the controller that comes with the DJI M30T. Having used this controller, I can attest that it's lighter, more comfortable, and has a much larger display, making it easier to use for long periods.

The buttons have also been strategically placed, allowing you to switch between camera views, start and stop RTH, and perform a myriad of other activities without letting go of the controls. However, upgrading to the newer drone wouldn't make sense just to get the controller, especially if you already have the DJI m300 RTK. Luckily, DJI has made it possible to use the DJI M300 RTK with the DJI RC Plus. This doesn't solve the range issue, but at least you will have a better controller, which could improve your efficiency.



## 2 IMPROVED RANGE

The DJI M350 RTK also comes with the O3 Enterprise, the latest transmission system for DJI's enterprise drones. This is the same transmission system used by the DJI M30T. As I mentioned in the previous post, the M30T's transmission system is quite powerful, even in areas with signal interference.

### **3 IMPROVED BATTERIES**

The new DJI M350 RTK comes with newer and more powerful batteries. While they may last almost the same time as the M300 RTK's, they have been improved to minimize overheating, and the charging cycles have been increased from 200 to 400, making them cost-efficient. The charging hub also gives you different charging options, such as normal mode, where you charge the batteries to 100%, or fast charging mode, where you charge them to 90% when you need to fly continuously but have few batteries. There is also a storage mode where you can charge the drone to a specific percentage when you don't think you will use the drone for a while. Like with the controller, you can also use the batteries and charging hub of the M350 RTK with the M300 RTK.

### **4 IMPROVED DURABILITY**

DJI has increased the M350's durability from IP45 to IP55, making the drone more water damage-resistant. While flying a drone in rain or snow is never advisable, some projects may require you to do so. Improved endurance reduces the chances of stalling your projects due to unfavorable weather. However, regardless of the IP rating, don't deliberately subject your drone to unfavorable weather conditions since this may void your warranty and may also be against local aviation regulations.

### **5 IMPROVED SAFETY FEATURES**

The DJI M350 RTK has improved safety features, such as the arm-lock sensor. I first saw this feature in the DJI M30T, and it comes in handy when you unfold the drone in a hurry and forget to confirm if the arms have locked. The DJI M300 RTK lacks this feature, and there have been cases where the drone had crashed when pilots forgot to lock at least one of the arms.

Other safety features include 6-directional obstacle detection and infrared sensors and an option to add a radar sensor to detect close range and smaller obstacles such as power lines, ensuring safer flight. The FPV camera also has night vision, allowing you to navigate easily at night or in low-light conditions.

## **6 IMPROVED EFFICIENCY**

The DJI M350 RTK comes with AI spot check, live mission recording, PinPoint, Oblique, Terrain Follow, and many other automated features that allow the user to automate the data collection process while ensuring accuracy.

## **7 PAYLOAD CAPACITY**

The DJI m350 RTK maintains the 2.7 KG payload capacity of the DJI M300 RTK, which can carry up to three payloads simultaneously. You can choose to use the H20 or Zenmuse payloads or customized payloads depending on the task. Thanks to Payload DK, Mobile SDK, and Cloud API, you can integrate the DJI M350 RTK with a wide range of payloads, such as gas detectors or loudspeakers, or integrate it with third-party apps.





## **TOP 8 FEATURES OF THE MATRICE 350 RTK**

- **DURABILITY AND WEATHER RESISTANCE.**
- **A FLAGSHIP REMOTE CONTROL: DJI RC PLUS.**
- **TRANSMISSION SYSTEM.**
- **ARM LOCKING SAFETY MECHANISM.**
- **LOW-LIGHT FPV CAMERA.**
- **FULL BACKWARD COMPATIBILITY WITH DJI ENTERPRISE PAYLOADS.**
- **TRAVEL AND TRANSPORT.**
- **BATTERY SYSTEM.**

# PRODUCT SPECIFICATIONS

## AIRCRAFT

### DIMENSIONS (UNFOLDED, WITHOUT PROPELLERS)

810×670×430 mm (L×W×H)

### DIMENSIONS (FOLDED, WITH PROPELLERS)

430×420×430 mm (L×W×H)

### DIAGONAL WHEELBASE

895 mm

### WEIGHT (WITH SINGLE DOWNWARD GIMBAL)

Without batteries:

Approx. 3.77 kg

With two TB65 batteries:

Approx. 6.47 kg

### SINGLE GIMBAL DAMPER'S MAX PAYLOAD

960 g

### MAX TAKEOFF WEIGHT

9.2 kg

### OPERATING FREQUENCY

2.4000-2.4835 GHz

5.150-5.250 GHz (CE: 5.170-5.250 GHz)

5.725-5.850 GHz

In some countries and regions, the 5.1GHz and 5.8GHz frequency bands are prohibited, or the 5.1GHz frequency band is only allowed for indoor use. Please refer to local laws and regulations for more information.

### TRANSMITTER POWER (EIRP)

2.4000-2.4835 GHz:

< 33 dBm (FCC)

< 20 dBm (CE/SRRC/MIC)

5.150-5.250 GHz (CE: 5.170-5.250 GHz):

< 23 dBm (CE)

5.725-5.850 GHz:

< 33 dBm (FCC/SRRC)

< 14 dBm (CE)



## HOVERING ACCURACY (WITH MODERATE OR NO WIND)

Vertical:

±0.1 m (with vision positioning)

±0.5 m (with GNSS positioning)

±0.1 m (with RTK positioning)

Horizontal:

±0.3 m (with vision positioning)

±1.5 m (with GNSS positioning)

±0.1 m (with RTK positioning)

## RTK POSITIONING ACCURACY (RTK FIX)

1 cm + 1 ppm (horizontal)

1.5 cm + 1 ppm (vertical)

## MAX ANGULAR VELOCITY

Pitch: 300°/s

Yaw: 100°/s

## MAX PITCH ANGLE

30°

When in N mode and with the forward vision system enabled: 25°.

## MAX ASCENT SPEED

6 m/s

## MAX DESCENT SPEED (VERTICAL)

5 m/s

## MAX TILTED DESCENT SPEED

7 m/s

## MAX HORIZONTAL SPEED

23 m/s

## MAX FLIGHT ALTITUDE

5000 m

When using the 2110s propellers and with the takeoff weight ≤ 7.4 kg.

7000 m

When using the 2112 High-Altitude Low-Noise Propellers and with the takeoff weight ≤ 7.2 kg.

## MAX WIND SPEED RESISTANCE

12 m/s

## MAX FLIGHT TIME

55 minutes

Measured with Matrice 350 RTK flying at approximately 8 m/s without payloads in a windless environment until the battery level reached 0%. Data is for reference only. Actual usage time may vary depending on the flight mode, accessories, and environment. Please pay attention to reminders in the app.

## SUPPORTED DJI GIMBALS

Zenmuse H20, Zenmuse H20T, Zenmuse H20N, Zenmuse P1, and Zenmuse L1

## SUPPORTED GIMBAL CONFIGURATIONS

Single downward gimbal

Single upward gimbal

Dual downward gimbals

Single downward gimbal + single upward gimbal

Dual downward gimbals + single upward gimbal

## INGRESS PROTECTION RATING

IP55

The IP rating is not permanently effective and may decrease due to product wear and tear.

## GLOBAL NAVIGATION SATELLITE SYSTEM

GPS + GLONASS + BeiDou + Galileo

## OPERATING TEMPERATURE

-20° to 50° C (-4° to 122° F)

# REMOTE CONTROLLER

## SCREEN

7.02-inch LCD touchscreen; resolution: 1920×1200; max brightness: 1200 nits

## WEIGHT

Approx. 1.25 kg (without WB37 battery)

Approx. 1.42 kg (with WB37 battery)

## GLOBAL NAVIGATION SATELLITE SYSTEM

GPS + Galileo + BeiDou

## BUILT-IN BATTERY

Type: Li-ion (6500 mAh@7.2 V)

Charging Type: Use the battery station or USB-C fast charger with a max power of 65 W (max voltage of 20 V).

Charging Time: 2 hours

Chemical System: LiNiCoAlO<sub>2</sub>

## EXTERNAL BATTERY (WB37 INTELLIGENT BATTERY)

Capacity: 4920 mAh

Voltage: 7.6 V

Type: Li-ion

Energy: 37.39 Wh

Chemical System: LiCoO<sub>2</sub>

## INGRESS PROTECTION RATING

IP54

## OPERATING TIME

Built-in Battery: approx. 3.3 hours

Built-in Battery + External Battery: approx. 6 hours

## OPERATING TEMPERATURE

-20° to 50° C (-4° to 122° F)

## OPERATING FREQUENCY

2.4000-2.4835 GHz

5.725-5.850 GHz

## TRANSMITTER POWER (EIRP)

2.4000-2.4835 GHz:

< 33 dBm (FCC)

< 20 dBm (CE/SRRC/MIC)

5.725-5.850 GHz:

< 33 dBm (FCC)

< 14 dBm (CE)

< 23 dBm (SRRC)

## WI-FI PROTOCOL

Wi-Fi 6

## WI-FI OPERATING FREQUENCY

2.4000-2.4835 GHz

5.150-5.250 GHz

5.725-5.850 GHz

## BLUETOOTH PROTOCOL

Bluetooth 5.1

## BLUETOOTH OPERATING FREQUENCY

2.4000-2.4835 GHz

# VIDEO TRANSMISSION

## VIDEO TRANSMISSION SYSTEM

DJI O3 Enterprise Transmission

### ANTENNA

4 video transmission antennas, 2T4R

**MAX TRANSMISSION DISTANCE (UNOBSTRUCTED, FREE OF INTERFERENCE)**

20 km (FCC)

8 km (CE/SRRC/MIC)

**MAX TRANSMISSION DISTANCE (WITH INTERFERENCE)**

Low Interference and Obstructed by Buildings: approx. 0-0.5 km

Low Interference and Obstructed by Trees: approx. 0.5-3 km

Strong Interference and Unobstructed: urban landscape, approx. 1.5-3 km

Medium Interference and Unobstructed: suburban landscape, approx. 3-9 km

Low Interference and Unobstructed: suburb/seaside, approx. 9-20 km

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# VISION SYSTEM

## OBSTACLE SENSING RANGE

Forward/Backward/Left/Right: 0.7-40 m

Upward/Downward: 0.6-30 m

### FOV

Forward/Backward/Downward: 65° (horizontal), 50° (vertical)

Left/Right/Upward: 75° (horizontal), 60° (vertical)

## OPERATING ENVIRONMENT

Surfaces with discernible patterns and adequate lighting (lux > 15)

# INFRARED SENSING SYSTEM

## OBSTACLE SENSING RANGE

0.1-8 m

## FOV

30° ( $\pm 15^\circ$ )

## OPERATING ENVIRONMENT

Large, diffuse, and reflective obstacles (reflectivity > 10%)

# LED AUXILIARY LIGHT

## EFFECTIVE ILLUMINATION DISTANCE

5 m

## ILLUMINATION TYPE

60 Hz, solid glow

# FPV CAMERA

## RESOLUTION

1080p

## FOV

142°

## FRAME RATE

30fps

# INTELLIGENT FLIGHT BATTERY

## MODEL

TB65

## CAPACITY

5880 mAh

## VOLTAGE

44.76 V

## TYPE

Li-ion

## ENERGY

263.2 Wh

## WEIGHT

Approx. 1.35 kg

## OPERATING TEMPERATURE

-20° to 50° C (-4° to 122° F)

## IDEAL STORAGE TEMPERATURE

22° to 30° C (71.6° to 86° F)

## CHARGING TEMPERATURE

-20° to 40° C (-4° to 104° F)

When the ambient temperature is below 5° C (41° F), the battery will trigger the auto-heating function. Charging at low temperatures may reduce battery life. It is recommended to charge at 15° to 35° C (59° to 95° F).

## CHARGING TIME

With a 220V power supply, it takes approximately 60 minutes to fully charge two TB65 Intelligent Flight Batteries and approximately 30 minutes to charge them from 20% to 90%.

With a 110V power supply, it takes approximately 70 minutes to fully charge two TB65 Intelligent Flight Batteries and approximately 40 minutes to charge them from 20% to 90%.

# **INTELLIGENT BATTERY STATION**

## **DIMENSIONS**

580×358×254 mm (L×W×H)

## **NET WEIGHT**

Approx. 8.98 kg

## **COMPATIBLE STORED ITEMS**

Eight TB65 Intelligent Flight Batteries

Four WB37 Intelligent Batteries

## **INPUT VOLTAGE**

100-120 VAC, 50-60 Hz

220-240 VAC, 50-60 Hz

## **MAX INPUT POWER**

1070 W

## **OUTPUT POWER**

100-120 V: 750 W

220-240 V: 992 W

## **OPERATING TEMPERATURE**

-20° to 40° C (-4° to 104° F)



# QUESTIONS

Answers....

## AIRCRAFT

**What is the ingress protection (IP) rating of M350 RTK?  
Can I fly the drone in the rain?**

M350 RTK is IP55 rated.

The IP rating is not permanently effective and may decrease due to wear and tear. Do not fly in rain heavier than 100 mm/24 hr.

**Which propellers come with M350 RTK?**

M350 RTK comes with the standard 2110s Propellers. You can also use the optional 2112 High-Altitude Low-Noise Propellers.

**Can I use the propellers of M300 RTK on M350 RTK?**

Yes, but only one type of propeller can be used simultaneously. Do not mix two types of propellers during use.

**Can I replace the propellers of M350 RTK by myself?**

Yes. When replacing the propellers, please also replace the corresponding screws and attach a proper amount of threadlocker (threadlocker 243 is recommended) to the surface of the new screws.



# QUESTIONS

Answers....

## BATTERY

### **How long does it take to fully charge two TB65 Intelligent Flight Batteries?**

With a 220V power supply, it takes approximately 60 minutes to fully charge two TB65 Intelligent Flight Batteries and approximately 30 minutes to charge them from 20% to 90%.

With a 110V power supply, it takes approximately 70 minutes to fully charge two TB65 Intelligent Flight Batteries and approximately 40 minutes to charge them from 20% to 90%.

### **Does M350 RTK support the TB60 Intelligent Flight Battery?**

Yes, but only two TB60 batteries can be used simultaneously. Do not mix TB60 and TB65 batteries during use.

### **Why does the battery heat up during long-term storage?**

During long-term storage, the battery will automatically discharge to approximately 50% to ensure storage safety and extend battery life. It is normal for the battery to feel slightly warm during this process.



## **Can I use the TB65 Intelligent Flight Battery in low-temperature environments?**

Yes. The operating temperature of the TB65 Intelligent Flight Battery is  $-20^{\circ}$  to  $50^{\circ}$  C ( $-4^{\circ}$  to  $122^{\circ}$  F). When the battery is used in low-temperature environments, the battery life will be reduced. Please schedule the flight time properly. To ensure optimal performance, it is recommended to keep the battery temperature above  $15^{\circ}$  C ( $59^{\circ}$  F) before flying.

For charging in environments of  $-20^{\circ}$  to  $5^{\circ}$  C ( $-4^{\circ}$  to  $41^{\circ}$  F), the battery will automatically heat up before starting the charging process. Once installed on the aircraft and powered on, the battery, if at a low temperature, will automatically heat up to maintain a temperature of approximately  $16^{\circ}$  to  $20^{\circ}$  C ( $60.8^{\circ}$  to  $68^{\circ}$  F).

## **What is the service life of the TB65 Intelligent Flight Battery?**

There are three ways to calculate the service life, including 12 months, 400 cycles, and 120 days of high-power storage. The final service life depends which comes first.

## **Can I carry the TB65 Intelligent Flight Battery onto an airplane?**

The energy of the TB65 Intelligent Flight Battery is 263 Wh, so it cannot be carried onto an airplane according to airline regulations.

## **How do the fans of the BS65 Intelligent Battery Station work?**

The fans automatically turn on or off and adjust rotation speed according to the ambient temperature and battery temperature.

## **How many batteries can be charged by the BS65 Intelligent Battery Station simultaneously?**

The BS65 Intelligent Battery Station can store eight TB65 Intelligent Flight Batteries and four WB37 Intelligent Batteries at the same time. It can charge two TB65 batteries and one WB37 battery simultaneously. Batteries with the highest battery level will be charged first, followed by others with lower levels.



# QUESTIONS

Answers....

## REMOTE CONTROLLER

### How do I charge DJI RC Plus?

The charger for the remote controller is integrated in the BS65 Intelligent Battery Station. You can charge the remote controller by connecting it to the battery station with the USB-C cable.

### Is M350 RTK compatible with the remote controller of M300 RTK?

No.

### Can I use DJI RC Plus with M300 RTK or the M30 Series?

Yes. Please update the firmware of DJI RC Plus to v01.02.04.40 or higher, select the corresponding drone model in DJI Pilot 2, and then complete the linking.



# QUESTIONS

Answers....

## RTK

### **Can I use M350 RTK for precision surveying?**

M350 RTK can perform precision surveying when equipped with Zenmuse P1, Zenmuse L1, or a third-party payload developed based on the Payload SDK. For details, please leave your contact information at the bottom of the page, and we will contact you as soon as possible.

### **Does M350 RTK support the post-processed kinematic (PPK) technology?**

When M350 RTK is mounted with Zenmuse P1 or Zenmuse L1, the task folder stores photos/point clouds, GNSS observations, and image log files, which are used for PPK post-processing calculations.

### **How does M350 RTK obtain real-time differential data?**

M350 RTK supports obtaining real-time differential data in the following ways:

1. Connect the aircraft to the D-RTK 2 Mobile Station (supporting RTCM3.2 protocol) via DJI Pilot 2.
2. Connect the remote controller to the custom Network RTK service based on NTRIP protocol (supporting RTCM3.0/RTCM3.1/RTCM3.2 protocols) via a Wi-Fi hotspot.

### **Can one D-RTK 2 Mobile Station support multiple M350 RTK simultaneously?**

Yes, there is no limit to the number of drones that can be used simultaneously.



# QUESTIONS

Answers....

## SDK

### **What changes have been made to the E-Port compared to the Onboard SDK port?**

E-Port is a new-generation expansion port of DJI Enterprise drones. E-Port has the same pin definition as the Onboard SDK port, but the USB link requires that the third-party payload be used as a secondary device (opposite to the Onboard SDK port). In terms of software, E-Port only supports Payload SDK V3 or later versions, and is not compatible with Onboard SDK. For technical support, please contact [dev@dji.com](mailto:dev@dji.com).

### **Which kinds of SDK development does M350 RTK support?**

M350 RTK supports Payload SDK, Mobile SDK, and Cloud API. For technical support, please contact [dev@dji.com](mailto:dev@dji.com).

### **Can I use third-party Payload SDK payloads compatible with the M200 Series and M300 RTK directly on M350 RTK?**

Third-party payloads developed based on the Skyport V2 or X-Port can be compatible with M350 RTK after updating the adapter and third-party firmware. For other questions, please contact the corresponding payload provider or DJI Support.



# QUESTIONS

Answers....

## PAYLOADS

### **Which payloads are compatible with M350 RTK?**

Zenmuse H20N, Zenmuse L1, Zenmuse P1, Zenmuse H20/H20T, and third-party payloads developed based on the Payload SDK.

### **How many payloads can be mounted on M350 RTK simultaneously?**

M350 RTK supports mounting up to three payloads simultaneously, with the single upward gimbal and dual downward gimbals used together.

## FIRMWARE

### **How do I update the firmware?**

You can update firmware in the following ways:

1. Connect the aircraft to a computer and use DJI Assistant 2 (Enterprise Series) to update the firmware of the aircraft, remote controller, and D-RTK 2 Mobile Station.
2. Use DJI Pilot 2 to update the firmware of the aircraft, remote controller, and Intelligent Battery Station.
3. Visit the official DJI website to download the offline firmware update package for the aircraft, Intelligent Battery Station, and remote controller. Then, insert an SD card storing the firmware package into the remote controller for offline update. For details, please refer to the user manual.



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