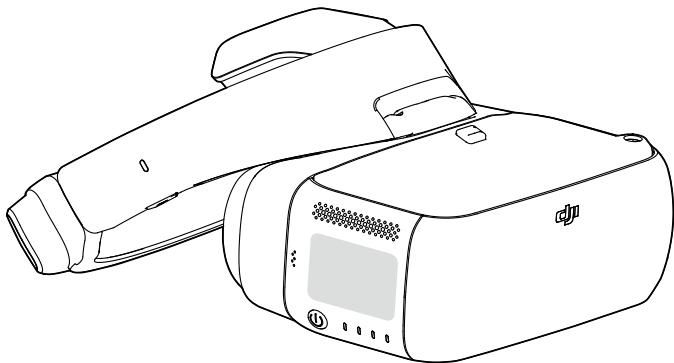


DJI GOGGLES

Racing Edition

User Manual V1.6

2019.04



Searching for Keywords

Search for keywords such as “battery” and “install” 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.

Using This Manual

Legends

 Warning

 Important

 Hints and Tips

 Reference

Read Before First Usage

Please read the following documents before using the DJI™ Goggles Racing Edition:

1. DJI Goggles Racing Edition In the Box
2. DJI Goggles Series Disclaimer and Safety Guidelines
3. DJI Goggles Racing Edition Quick Start Guide
4. DJI Goggles Racing Edition User Manual

We recommend you check that you have all of the included parts listed in In the Box. Please watch all the tutorial videos on the official DJI website and read the disclaimer to understand your legal rights and responsibilities. Prepare for your first usage by reviewing the Quick Start Guide and refer to the User Manual for more details. If you have any questions or problems during the installation, maintenance or use of this product, please contact DJI or a DJI authorized dealer.

Video Tutorials

Please watch the tutorial videos in the link below, which demonstrate how to use the DJI Goggles RE safely:

<http://www.dji.com/dji-goggles-re/info#video>

Download the DJI Assistant 2

Download DJI ASSISTANT™ 2 at

<http://www.dji.com/dji-goggles-re/info#downloads>

DJI Assistant 2 supports Windows 7 (or later) or OS X 10.11 (or later).

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Product Profile

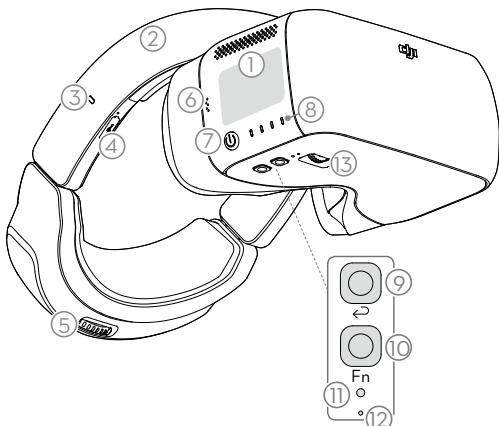
Introduction

DJI Goggles Racing Edition (abbreviated as “Goggles RE”) are equipped with high-performance displays and an ultra-low latency video downlink for use with DJI aircraft, giving you a real-time aerial FPV (First Person View) experience. Goggles RE can also be used to play HD videos, bringing you an immersive high-definition viewing experience.

Precisely engineered for racing, Goggles RE are compatible with DJI’s advanced OCUSYNC™ video transmission module, supporting both analog and 2.4/5.8 GHz dual-band digital video signal with up to 7 km transmission distance and latency as low as 50 ms.* Goggles RE comes with a set of three compatible antennas for different scenarios. The DJI OcuSync Air System comes equipped with an array of powerful features, such as 1280×960 HD transmission, automatic Frequency-Hopping Spread Spectrum (FHSS) transmission, and access to up to 19 selectable transmission channels. This module is compatible with a variety of multi-rotor and fixed-wing aircrafts.

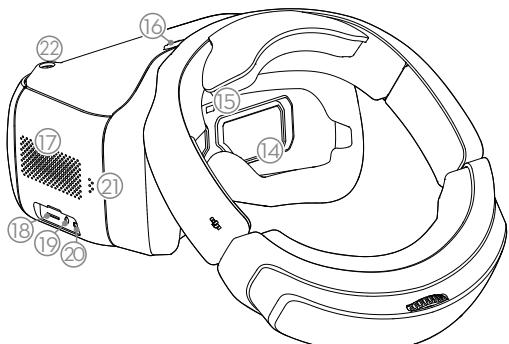
At a Glance

DJI Goggles Racing Edition



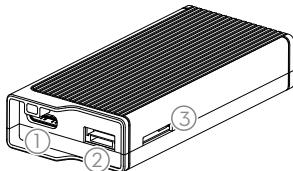
1. Touch Panel
2. Headband
3. Charging Status Indicator
4. Micro USB Port
5. Headband Knob
6. Speaker
7. Power Button
8. Battery Level Indicators
9. Back Button
10. Function Button
11. Link Button
12. Linking Status Indicator
13. IPD (Interpupillary Distance) Knob

14. Lens
15. Proximity Sensor
16. Headband Buckle
17. Heat Vent
18. Micro SD Card Slot
19. 3.5 mm Audio Port
20. HDMI Type-D Port
21. Speaker
22. SMA Antenna Port



* The Goggles RE can reach their maximum transmission distance (2.4 GHz, FCC) in a wide open area with no EMI (electromagnetic interference), achieving minimum latency in 480p50 live view mode.

DJI OcuSync Air Unit



1. Camera Port*

Connects to the DJI OcuSync Camera.
2. S.Bus Port

Connects with the 3-in-1 Cable (Power, S.Bus, UART), and connects to the power, flight controller, and OSD port based on the information below.

RED: Power
 BLACK: Power GND
 WHITE: UART RX (Connects to OSD TX)
 GRAY: UART TX (Connects to OSD RX)
 BROWN: Signal GND
 YELLOW: S.Bus (Connects to Flight Controller RX)
3. Micro SD Card Slot

Insert the Micro SD card to store the recorded video.

* Note that both this port and the camera connector plug are customized Type-C interfaces, and they are not compatible with third-party equipment.

4. Antenna Ports (MMCX)

Used to attach the Air Unit antennas.
5. Micro USB Port

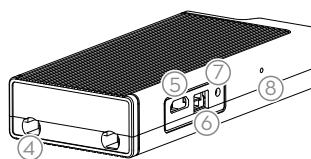
Connects to your PC for firmware updates through DJI Assistant 2.
 (When the Air Unit is powered on)
6. PPM Port

Connects to external devices that can handle PPM signals via the PPM Cable. Set the corresponding channel in DJI Goggles RE to control the device remotely with head movements. (coming soon)

RED: Power
 BLACK: Signal GND
 WHITE: PPM signal
7. Link Button

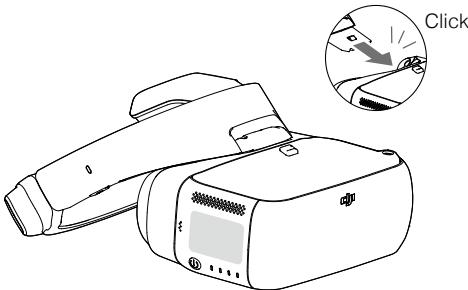
Press this button to link the OcuSync Air Unit with the Goggles RE.
8. Linking Status Indicator

Indicates the linking status of the DJI OcuSync Air Unit and the Goggles RE.



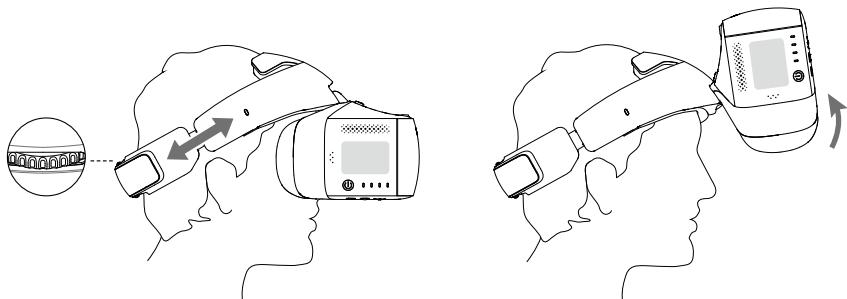
Installation and Wearing

1. Insert the Headband into the slot above the Goggles RE body until you hear a click. Now check that it has been securely fastened.



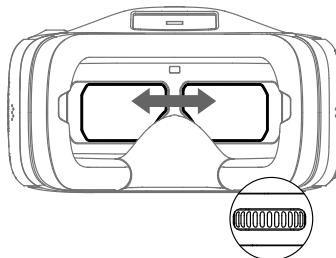
Press the Headband Buckle and move it in the opposite direction to release the Headband.

2. Align the lenses over your eyes and pull the Headband down. Adjust the Headband Knob until the Goggles RE fit snugly and comfortably on your face and head.



- Goggles RE can be worn over glasses.
- When putting the Goggles RE on, you can flip the Goggles RE body to see the world outside.

3. Turn the IPD Knob to adjust the distance between the lenses until the images are properly aligned.



Usage

Operating Control

[1] Power Button

Press the power button once, then press it again and hold to turn the Goggles RE on/off. Battery level indicators will display the current battery level.



Low ← Battery Level → High

[2] Battery Level Indicators

When the battery is powered off, press the power button once to light up the battery level indicators to display the current battery level.

The battery level indicators will also show the current battery level during charging and discharging. The indicators are defined below:

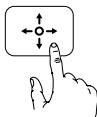
LED on LED flashing LED off

Battery Level Indicators

LED1	LED2	LED3	LED4	Battery Level
				87.5%~100%
				75%~87.5%
				62.5%~75%
				50%~62.5%
				37.5%~50%
				25%~37.5%
				12.5%~25%
				0%~12.5%
				=0%

[3] Touch Panel

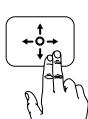
Use the touch panel with your right hand to control on-screen operations.



↔ Browse the menu and swipe right/left

↕ Browse the menu and swipe up/down

○ Tap to confirm



← Lock the touch panel to make it non-functional

→ Unlock the touch panel

↓ Enter shortcut menu

↑ Exit shortcut menu

○ Tap and hold to screenshot, and the image will be saved in the Micro SD card of the Goggles RE.*

* Please ensure the Micro SD card is inserted into the Goggles RE.

[4] Charging Status Indicator

This indicates the current charging status. The LED will be solid red, yellow or green to reflect low, medium, and high power levels respectively.

Blinking Red	Solid Red	Solid Yellow	Solid Green
Headband abnormal	0~29%	30~89%	90~100%

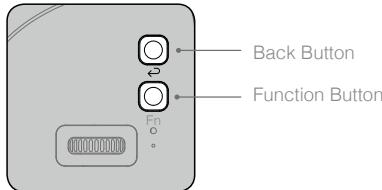
[5] Back Button

Press this to return to the previous menu, or exit the current Intelligent Flight Mode.

[6] Function Button

For DJI aircraft that support focus (e.g. MAVIC™ Pro, PHANTOM™ 4 Pro), press this to show the focus cursor on the display screen and swipe forward and backward on the touch panel with one finger to zoom in or out. Move your head then tap the touch panel to define the focus point. For other third-party devices when using digital video transmission, press to start or stop video recording.

 The Goggles RE support up to 4x zoom on the Mavic Pro.



[7] Link Button

When connected with the aircraft by OCUSYNC™, press the link button with an appropriate tool to start linking.

[8] Linking Status Indicator

Indicates the linking status of the Goggles RE and the aircraft. The indicator will be solid red while linking and will go solid green when linked.

Connection

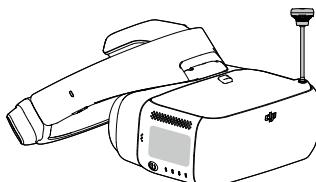
Goggles RE support the DJI OcuSync Air System, third-party analog video transmitters, and a wide range of DJI aircrafts for different uses. Please follow the steps below for connecting with these devices.

Analog Video Transmitter

The analog frequency band is 5.650 GHz - 5.925 GHz. This range supports various third-party analog transmission devices and can be used in scenarios such as racing drones and controlling model aircraft, ship, and other vehicles.

Linking Method

1. Install the Pagoda antenna (SMA interface) to Goggles RE's SMA port.



2. Power on the Goggles RE, swipe downward with two fingers on the touch panel to enter the shortcut menu and select “Racing Drone (Analog)> Frequency Scanning” to search for the frequency you need.

 • The analog frequency band is 5.650 GHz - 5.925 GHz, of which 5.725 GHz - 5.850 GHz are ISM frequency bands. You may use these frequencies without permission but please be sure to have the relevant license and follow local regulatory procedures when using the other frequency bands.

• The Pagoda antenna is an omnidirectional left hand circularly polarized (LHCP) antenna design. It is recommended to use the Pagoda antenna or other left hand circularly polarized antennas for analog transmitters to achieve the best transmission performance.

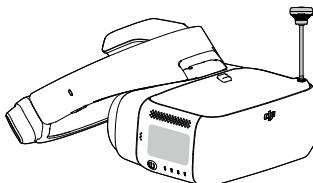
 • In a multi-aircraft flying environment, the adjacent frequency interval should be higher than 25 MHz to avoid nearby frequencies affecting the live view of your Goggles RE.

DJI OcuSync Air System

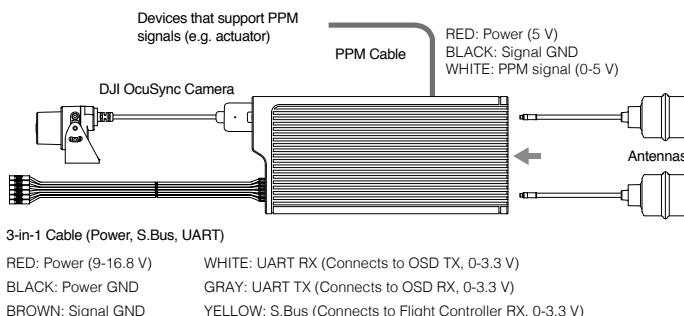
The Goggles RE's built-in DJI OcuSync dual-band wireless receiver is compatible with a DJI OcuSync Air System, which you can install on a third-party device to transmit digital video signals. Digital video transmission supports 1280 × 960p50, 1280 × 720p60 and 640 × 480p50, as well as automatic Frequency-Hopping Spread Spectrum (FHSS) transmission. Digital video transmission can also access to up to 19 selectable transmission channels, which can be used for racing drones, model aircraft, ship, and other vehicles, as well as for industrial use.

Basic Linking

1. Install the Pagoda antenna (SMA interface) to Goggles RE's SMA port.



2. Install the DJI OcuSync Air System on a third-party device to link with the Goggles RE. Please refer to the illustration below to mount and connect the components onto your device.





- The S.Bus port and PPM port on the Air Unit are only used when transmitting remote control signals. These ports don't need to be connected if only using video downlink.
- There are up to 19 channels (5.8 GHz: 12 channels; 2.4 GHz: 7 channels) for digital video transmission, and each bandwidth is 10 MHz. You can manually select the transmission channel to avoid interference from other devices.



- Please be aware that the Air Unit may become very hot during or after operation. DO NOT touch the Air Unit before it has sufficiently cooled down.
- Please avoid using the Air Unit for an extended period of time when there is no external cooling equipment present, as this may cause the Air unit to enter Overheat Protection mode. Wait for the module to cool down and then you can restart it. It is recommended to have an external fan installed to dissipate heat.
- Place the two antennas on the Air Unit vertically and parallel to each other at least 30 mm apart. Please note that you should avoid placing the antennas level with any electrically conductive material. Also, make sure to keep the bottom of the antenna at least 25 mm away from potential conductors such as cables, carbon fiber frames, batteries, and metals.
- If you are only using the Air Unit to transmit downstream video signals, DO NOT use the same frequency band as the upstream control signal to avoid interference.

Antenna	Description
Pagoda Antenna	5.8 GHz single frequency circular polarization omnidirectional, small size, recommended for racing. Do not use this antenna when using the 2.4 GHz frequency band.
Cylindrical Antenna	Dual-frequency circular polarization omnidirectional, providing smooth long-range video transmission.
Dipole Antenna	Dual-frequency linear polarization omnidirectional, suitable for close-up flight.

3. Power on the DJI OcuSync Air Unit and press the link button on the Air Unit with an appropriate tool when the linking status indicator is solid green. The indicator will turn solid red when the air unit is waiting for linking.
4. Power on the Goggles RE, then press the link button with an appropriate tool in the main menu, or just swipe down on the touch panel with two fingers to enter the shortcut menu and select “Racing Drone (Digital) > Linking Settings > Quick Linking”.
5. Make sure the distance between Goggles RE and the Air Unit is within 2 m. Both linking status indicators will turn solid green when successfully linked, and the video will display normally.

Multi-Device Linking

The DJI OcuSync Air System supports linking two devices to receive video transmission at the same time. Below are two specific scenarios.

Two Goggles RE:

1. Follow the steps 1 and 2 of “Basic Linking” above to complete the linking of Goggles RE and DJI OcuSync Air System respectively.

2. Power on the DJI OcuSync Air Unit and press the link button on the Air Unit with an appropriate tool when the linking status indicator is solid green. The indicator will turn solid red when the Air Unit is waiting for linking.
3. Power on the Goggles RE and swipe down on the touch panel with two fingers to enter the shortcut menu, then select “Racing Drone (Digital) > Linking Settings > Advanced Linking > Connect two sets of Goggles RE > Primary” and confirm. This Primary Goggles RE will be linked with the DJI OcuSync Air System in a few seconds.
4. Press the link button on the Air Unit again. The indicator will turn solid red when the Air Unit is waiting for linking.
5. Power on the other Goggles RE and swipe downward with two fingers on the touch panel to enter the shortcut menu, select “Racing Drone (Digital) > Linking Settings > Advanced Linking > Connect two sets of Goggles RE > Secondary” and confirm. This Secondary Goggles RE will be linked with the DJI OcuSync Air System in a few seconds.

Goggles RE + Mavic Pro Remote Controller:

1. Follow the steps 1 and 2 of “Basic Linking” above to complete the linking of Goggles RE and DJI OcuSync Air System respectively.
2. Power on the Goggles RE and swipe down on the touch panel with two fingers to enter the shortcut menu, select “Racing Drone (Digital) > Wireless Settings > Auto”, and set 2.4 GHz as the operating frequency, since this is the only frequency that the Mavic Pro Remote Controller supports.
3. Power on the DJI OcuSync Air Unit and press the link button on the Air Unit with an appropriate tool when the linking status indicator is solid green. The indicator will turn solid red when the Air Unit is waiting for linking.
4. Put on Goggles RE, select “Racing Drone (Digital) > Linking Settings > Advanced Linking > Connect two sets of Goggles RE > Primary” and confirm. This Primary Goggles RE will be linked with the DJI OcuSync Air System in a few seconds.
5. Press the link button on the Air Unit again. The indicator will turn solid red when the Air Unit is waiting for linking.
6. Connect your mobile device to the Mavic Pro Remote Controller, launch the DJI GO™ 4 app and enter the camera view. Press  , then select “Remote Controller Linking > Secondary Remote Controller”. The Remote Controller will be linked with the DJI OcuSync Air System in a few seconds.



You can only view video transmission on the mobile device linked to the Mavic Pro Remote Controller. Upstream control signal transmission is not supported.

After familiarizing yourself with digital video transmission, you can connect the trainer port on a third-party remote controller and the audio port on the Goggles RE with a trainer cable to transmit the control signal to a racing drone. In addition, the PPM port of the DJI OcuSync Air Unit can be connected to the gimbal actuator, enabling gimbal control through your head movements.

DJI Aircraft using OcuSync

With OcuSync, the Goggles RE can be connected to the Mavic 2 series, Mavic Pro or the Phantom 4 Pro/Pro+ V2.0 wirelessly.

- Toggle the control mode switch of the Mavic Pro to RC mode before linking.
- ⚠ • Ensure that the DJI GO 4 app is updated to the latest version.
- Mavic 2 series and Phantom 4 Pro/Pro+ V2.0 currently only supports linking with Goggles RE by Standard Mode.

Standard Mode

Standard Mode is suitable for both single and dual operator aircraft control. In this mode, the pilot using the remote controller can focus on flight, while the Goggles RE operator can view the environment in real-time FPV for more intuitive control. By moving their head, the Goggles RE wearer can control aircraft orientation or gimbal movement.



- Remote Controller
- DJI GO 4 App
- ✓ Live View
- ✓ Intelligent Flight Mode



- Goggles RE
- ✓ Live View
- ✓ Head Tracking
- ✓ Intelligent Flight Mode



- If the remote controller and Goggles RE are operated by the same user, a spotter who is able to give instructions and warnings is required to ensure safe flying.
- In Head Tracking Flight, aircraft yaw can be controlled by both the Goggles RE and the remote controller. With Head Tracking Gimbal, the gimbal will only move with the movement of the Goggles RE.

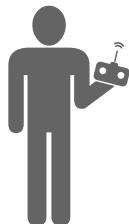
Linking Method

1. Ensure both the aircraft and the remote controller are powered on and linked.
2. Put on the Goggles RE and power on.
3. Press the link button on Goggles RE or use the touch panel to enter “Tools > Settings > Linking Settings”, select “Quick Linking” and confirm. The Goggles RE linking status indicator will go solid red on standby for linking.
4. Press the link button on the aircraft. Once linked, the Goggles RE linking status indicator will turn solid green.

Coach Mode

Coach Mode is suitable for dual operator aircraft control. In this mode, the pilot using the remote controller can focus on flight, while the Goggles RE operator with a secondary remote controller can view the environment in real-time FPV for more intuitive control.

By moving their head, the Goggles RE wearer can control aircraft orientation or gimbal movement. They can also control the aircraft with the auxiliary secondary remote controller that is inferior to the priority control of the primary remote controller. Please note that only the DJI GO 4 app connected with the primary remote controller and the Goggles RE can display the live view.



- Remote Controller (primary)
- DJI GO 4 App
- ✓ Live View
- ✓ Intelligent Flight Mode



- Goggles RE (secondary)
 - ✓ Live View
 - ✓ Head Tracking
 - ✓ Intelligent Flight Mode
- Remote Controller (auxiliary secondary)
 - ⌚ +2 s
 - ⚠ Can't switch flight modes.
 - No live view, only support settings.



- Only the primary remote controller can switch flight modes.
- If two operators control the aircraft simultaneously, the commands from the primary remote controller takes priority of aircraft movements (control sticks and gimbal dial). The auxiliary secondary remote controller only works if the primary remote controller is not being operated for more than two seconds, whereas the primary remote controller can always override it to regain control. The two remote controllers follow the same priority for other commands.
- If the Goggles RE are powered off or disconnected from the aircraft for more than 30 seconds during flight, the Goggles RE's corresponding secondary remote controller will replace it to control the aircraft. Note that there is still no live view on the DJI GO 4 app connected to the secondary remote controller.

Linking Method

1. Please ensure that both the aircraft and the primary remote controller are powered on and linked together.
2. Put on the Goggles RE and power on.
3. Use the touch panel to enter “Tools > Settings > Linking Settings”.
4. Select “Advanced Linking > Connect one set of Goggles RE” and confirm. The Goggles RE linking status indicator will go solid red to wait for linking.

5. Press the Link button on the aircraft. Once linked, the linking status indicator will turn solid green.
6. Select "Connect Remote Controller" and confirm in Goggles RE.
7. Power on the auxiliary secondary remote controller and connect it with the mobile device.
8. Launch the DJI GO 4 app and enter the camera view. Press  , then select "Remote Controller Linking > Secondary Remote Controller," for successful linking in a few seconds.

Multiuser Mode

Multiuser Mode is suitable for dual (or more) aircraft operator control. In this mode, the Goggles RE operators with a secondary remote controller can view the environment in real-time FPV for more intuitive control. Please note that only the Goggles RE will display live view and that the primary Goggles RE only support head tracking.



<ul style="list-style-type: none"> • Remote Controller (main secondary) <p> No live view, only support settings.</p>	 <ul style="list-style-type: none"> • Goggles RE (primary) <ul style="list-style-type: none"> ✓ Live View ✓ Head Tracking ✓ Intelligent Flight Mode 	 <ul style="list-style-type: none"> • Goggles RE (secondary) <ul style="list-style-type: none"> ✓ Live View ✓ Intelligent Flight Mode ✗ Head Tracking <ul style="list-style-type: none"> • Remote Controller (auxiliary secondary) <p> +2 s</p> <p> Can't switch flight modes. No live view, only support settings.</p>
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- If the remote controller and Goggles RE are operated by one person but for two users, a spotter who is able to instruct and give warning is required for safe flying.
- Only the primary remote controller can switch flight modes.
- Secondary Goggles RE do not support head tracking.
- If two operators control the aircraft simultaneously, the commands from the main secondary remote controller takes priority of aircraft movements (control sticks and gimbal dial). The auxiliary secondary remote controller only works if the main secondary remote controller is not being operated for more than two seconds, whereas the main secondary remote controller can always override it to regain control. The two remote controllers follow the same priority for other commands.
- If the Goggles RE are powered off or disconnected from the aircraft for more than 30 seconds during flight, the Goggles RE's corresponding secondary remote controller will replace it to control the aircraft. Note that there is still no live view on the DJI GO 4 app connected to the secondary remote controller.

Linking Method

1. Put on the Primary Goggles RE and power on.
2. Use the touch panel to enter “Tools > Settings > Linking Settings”.
3. Select “Advanced Linking > Connect two sets of Goggles RE > Primary/Remote Controller” and confirm. The linking status indicator will go solid red to wait for linking.
4. Press the Link button on the aircraft. Once linked, the linking status indicator will turn solid green.
5. Select whether to connect with the remote controller in the Goggles RE. Next, power on the main secondary remote controller and connect it with a mobile device, if required.
6. Launch the DJI GO 4 app and enter the camera view. Press , then select “Remote Controller Linking > Primary Remote Controller”. They will link after a few seconds.
7. Repeat the above steps for the secondary pair of Goggles RE and the secondary remote controller. Please note that you must select “Advanced Linking > Connect two sets of Goggles RE > Secondary/Remote Controller” in the Goggles RE, and then select “Remote Controller Linking > Secondary Remote Controller” on the mobile device.

Other DJI Aircraft

The Goggles RE can also support other DJI aircraft. Ensure that the aircraft is linked with the remote controller and then connect the Goggles RE to the Micro USB port or the HDMI port of the remote controller.



INSPIRE™ 2

PHANTOM 4 Series*

MAVIC AIR

SPARK™ **

Micro USB cable

Support Head Tracking, Intelligent Flight Modes, and Live view.

INSPIRE Series

PHANTOM 4 PRO+

PHANTOM 4 ADVANCED+

HDMI cable

Support only Live view. Aircraft operation is not supported.

 When using an HDMI cable, you can secure the wire clip to the left side of the Goggles RE headband, which allows the HDMI cable to pass through the clip recess down your back.

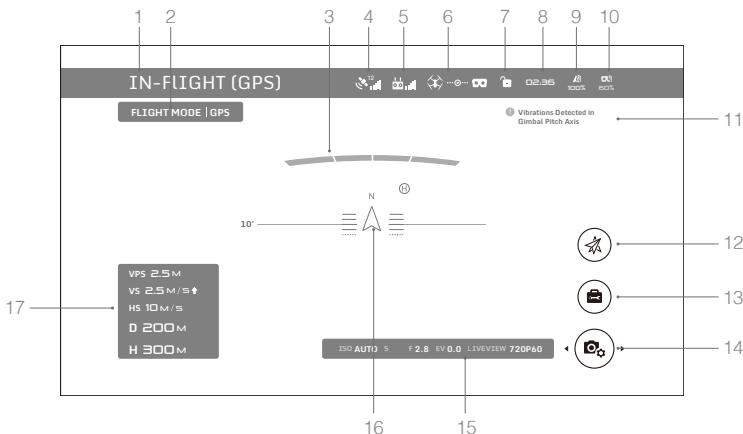
* Please note that the Phantom 4 Pro+/Advanced+ remote controller must have the latest firmware update.

** Connect an OTG cable to the Micro USB port on the remote controller, then connect to the Goggles RE with a Micro USB cable.

Screen

Main Screen

The main screen of the Goggles RE and functions are described as follows:



1. Aircraft Status

Indicates aircraft flight status.

2. Flight Mode

Indicates current flight mode.

3. Obstacle Detection Status

Red bars are displayed when obstacles are close to the aircraft. Orange bars are displayed when obstacles are in detection range.

4. GPS Status

Indicates GPS signal strength.

5. Remote Controller Signal Strength

Indicates the strength of the remote controller signal.

6. Connection Status

Indicates the connection status of the aircraft and Goggles RE. Green indicates a healthy signal connection, yellow indicates a weak or unstable signal connection, and red indicates a disconnection. The Goggles RE will automatically attempt to reconnect if disconnected.

7. Touch Panel Lock Status

Indicates the lock status of the touch panel. A locked touch panel will be unresponsive to touch to avoid accidental control. Swipe forward with two fingers to unlock it.

8. Flight Time

Shows the flight time of the aircraft.

9. Aircraft Battery Level

Shows the current battery level of the Intelligent Flight Battery.

10. Goggles RE Battery Level

Shows the current battery level of the Goggles RE.

11. Prompt Message

Shows warning messages. Swipe up or down to select and tap to delete prompts.

12. Intelligent Flight Modes

Tap to select TapFly, ActiveTrack, Terrain Follow, Tripod, and other intelligent flight modes.

13. Tools

Tap to set the settings of the Goggles RE and select Auto Takeoff/Landing, HDMI video playback, or flight photos/videos playback.

The Settings menu also includes video tutorials, linking settings, language settings, volume settings, gimbal modes, AR auxiliary settings, and more.

 **Gimbal Mode**

- FPV Mode: The gimbal synchronizes with aircraft movement for a first-person flying experience.
- Follow Mode: The gimbal keeps the camera steady, allowing for a stable and horizontal view.

 **AR Auxiliary Settings**

- Fixed-Wing Mode AR: Displays the aircraft's flight path in Fixed-Wing mode.
- Head Tracking Gimbal AR Assist: Indicates the central position of the gimbal (front direction of the aircraft).
- Head Tracking Flight AR Assist: Indicates the aircraft's yaw and throttle gain values.

14. Camera Settings/Shoot/Record Button

Tap to set the ISO, shutter, aperture, and auto exposure values of the camera.

Swipe left or right to switch between Shoot and Record mode. Tap to shoot photos or start/stop recording video.

15. Camera Parameters and Live View Mode*

Shows the setting parameters of the camera and Live View Mode.

16. Flight Attitude

The triangle indicates the direction the aircraft is facing.

The horizontal level indicates aircraft roll angle.

The scale indicates the tilt angle of the gimbal.

The arc beside the triangle indicates the yaw angle of the gimbal when Head Tracking Gimbal is enabled.

17. Flight Telemetry

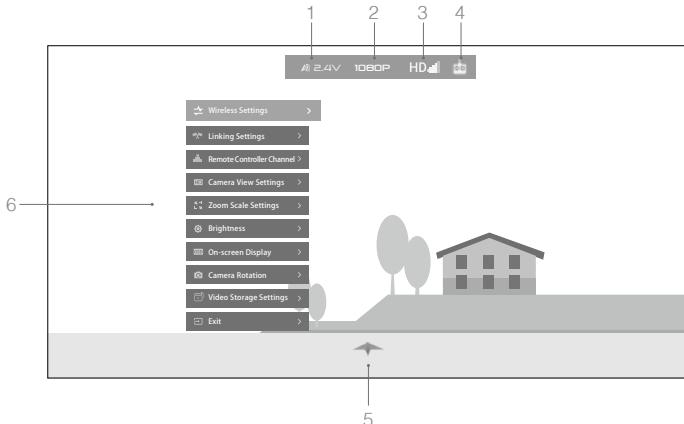
Flight Telemetry is the horizontal/vertical distance between the aircraft and the Home Point as well as the movement speed across the horizontal/vertical distance of the aircraft. When the aircraft is close to the ground, the altitude will be displayed.

* Live View Mode of the Goggles RE interacts with the aircraft's video recording.

When Live View Mode is in HD mode, video recording automatically switches to 1080p30. When in smooth mode, video recording automatically switches to 1080p60.

If you change the video recording mode of the aircraft, the live view of Goggles RE will preferentially synchronize with the matching format (1080p30 HD or 720p60 smooth mode). Otherwise, it will adjust Live View Mode to 720p30.

Digital Transmission Screen



1. Aircraft Voltage

Shows the aircraft voltage read by the flight controller.

2. Live View Mode

Shows the current live view resolution.

3. Video Downlink Signal Strength

Indicates the strength of the video downlink between the Goggles RE and the DJI OcuSync Air System.

4. Remote Controller Connection

Indicates that the audio port of the Goggles RE is connected to the trainer port of a third-party remote controller through a trainer cable.

5. Flight Attitude

Indicates the aircraft's roll and tilt angle during flight. Ensure that the UART input of the S.Bus port of the DJI OcuSync Air Unit is properly connected with the OSD output of the third-party flight controller.

6. Menu Bar

Tap the touch panel to call up the menu bar.

a) Wireless Settings

Manual mode bandwidth is 10 MHz, which is suitable for high-interference environments, such as one that contains many wireless devices. The interference intensity of different channels will be displayed, and it is recommended to use a green channel, which indicates lower interference.

Auto mode bandwidth is 20 MHz, which is suitable for low-interference environments, providing an enhanced quality for the live view.

Please refer to the specifications to select appropriate frequency. (2.4 GHz / 5.8 GHz)

b) Linking Settings

Links Goggles RE or a remote controller with the DJI OcuSync Air System wirelessly. A variety of connection modes are supported.

c) Remote Controller Channel

Displays up to 8 channels of the remote controller output for debugging. Ensure that the S.Bus port of the DJI OcuSync Air Unit is properly connected with the OSD output of third-party flight controller, and that the Goggles RE's audio port is connected to the trainer port of a third-party remote controller.

- d) Camera View Settings
Supports 1280×960, 1280×720, and 640×480 live view modes.
- e) On-screen Display
Enables/disables the Image Transmission signal, Image Transmission Resolution, and Flight Attitude on-screen displays separately.
- f) Camera Rotation
Rotates the live view and recorded video by 180° to suit special installation or shooting needs.
- g) Video Storage Settings
Enables/disables saving recorded video to the Micro SD card on the DJI OcuSync Air Unit or Goggles RE separately. Tap the Function Button on Goggles RE to start/stop video recording. Video saved on the Micro SD card of the DJI OcuSync Air Unit can be connected to a computer for browsing, but cannot be viewed in "Aircraft Storage". Videos saved on the Goggles RE can be played in "Local Storage".

Controlling the Aircraft

The functional support list of the Goggles RE when connected with different aircraft is shown below.*

	Mavic 2 Series**	Mavic Pro	Phantom 4 Pro/Pro+ V2.0	Mavic Air	Spark	Phantom 4 Pro/Advanced Series	Phantom 4	Inspire 2	Inspire 1 Series
Head Tracking Flight	√	√	√	√	√	√	√	√	×
Head Tracking Gimbal	√	√	√	√	√	√	√	√	×
Focus	√	√	√	✗	✗	√	✗	√	✗
Auto Takeoff / Return-to-Home	√	√	√	√	√	√	√	✗	✗
TapFly	√	√	√	√	√	√	√	✗	✗
ActiveTrack	√	√	√	√	√	√	√	✗	✗
Terrain Follow	✗	√	√	✗	✗	√	√	✗	✗
Tripod	✗	√	√	✗	√	√	✗	✗	✗
Cinematic	✗	√	√	✗	✗	✗	✗	✗	✗
Fixed-Wing	✗	√	✗	✗	✗	✗	✗	✗	✗

* Some functions will be supported later, please pay attention to future updates.

** Mavic 2 Enterprise and Mavic 2 Enterprise Dual are not included.

-  When linked to the Mavic 2 series or Mavic Pro, the remote controller can be used to control the Goggles RE. 5D button = Touch Panel; C1 button = Function button; C2 button = Back button. Press the C1 and C2 buttons together to enter the shortcut menu, and press the C2 button to exit. These remote controller buttons will be used to control the Goggles RE and their original function will be disabled. Please fly with caution.

Intelligent Flight Modes

Goggles RE support DJI Intelligent Flight Modes such as TapFly, ActiveTrack, Terrain Follow, Tripod, Fixed-Wing and more. Please refer to the aircraft user manual for further details.

Use the touch panel to enter "Intelligent Flight Mode" and select the corresponding button to enable the desired mode. Enable TapFly, ActiveTrack or Fixed-Wing in the Goggles RE as follows:

1. TapFly
 - a) Use the touch panel to enter "Intelligent Flight Mode > TapFly".
 - b) Move your head to control the cursor in the Goggles RE and then tap the touch panel to

confirm the target direction and wait for the  icon to appear.

- c) Tap again to confirm the selection and the aircraft will fly in that direction.
- d) Press the back button on the Goggles RE to exit the current target direction or TapFly.

2. ActiveTrack

- a) Use the touch panel to enter "Intelligent Flight Mode > ActiveTrack".
- b) Move your head to control the cursor in the Goggles RE and then tap the touch panel to select the target subject. If the subject is not automatically recognized, move your head from the upper left corner to the lower right corner to drag a box around it.
The box will turn green when tracking is in progress. If the box turns red, the object could not be identified and you should try again.
- c) Tap again to confirm the selection and the aircraft will track the target subject.
- d) Press the back button on the Goggles RE to exit the current target subject or ActiveTrack.

3. Fixed-Wing

- a) Use the touch panel to enter "Intelligent Flight Mode > Fixed-Wing".
- b) When the forward speed of the aircraft is more than 3 m/s, you can select to enter a Fixed-Wing cruise option. Press the function button or tap the touch panel on the Goggles RE to enter Fixed-Wing Mode.
- c) Press the back button on the Goggles RE to exit Fixed-Wing Mode.

Shortcut Menu

Swipe downward with two fingers on the touch panel to enter the shortcut menu. Move the cursor and tap the touch panel to turn functions on/off.

The Goggles RE support head tracking, which allows the aircraft to follow head movements:

1. Head Tracking Flight

Move your head to control the aircraft and the gimbal. Turn left and right to control the yaw of the aircraft, and turn up and down to control the pitch of the gimbal (-90° to 30°).

2. Head Tracking Gimbal

Move your head to control the gimbal. Turn left and right to control the yaw of the gimbal (-30° to 30°), and turn up and down to control the pitch of the gimbal (-90° to 30°).

3. Reset Motion Control

Set the gimbal to the center position or simulate the yaw stick in the mid-point of the remote controller. Head tracking will center on this point.



You can set the head tracking sensitivity in Tools setting.



- When Head Tracking is enabled (especially Head Tracking Flight), the aircraft yaw or gimbal movement will be affected. Please fly with caution and pay attention to control with the remote controller.
- It is recommended you use a 720p60 high frame rate format to ensure a smooth live view during fast movements.
- The functions in the shortcut menu are disabled when using TapFly and ActiveTrack.
- Only Head Tracking Flight can be enabled when using Fixed-Wing Mode. This head tracking function should be enabled before entering the Fixed-Wing cruise option and your head is best kept stable at that time.

Viewing Photos and Videos

Review your flight videos and photos, use your head and body movement to view panoramas, and watch HD video content through the Goggles RE for an immersive viewing experience.

Flight Photos and Videos

Select “Tools > Playback” to enter the playback page for flight photos and videos (shot by DJI aircraft only), or demo videos.



Local Storage

Remove the Micro SD card from the aircraft and insert it into the Micro SD Card slot on the Goggles RE and then select “Local Storage”.

Aircraft Storage

Select “Aircraft Storage” to preview images stored on the aircraft. When you are browsing photos or videos, you can swipe up/down with one finger to download or delete them.

Panorama

Goggles RE support panorama picture-browsing with up to 6000x3000 resolution (only sphere panorama is currently supported). You can move your head and body to view all parts of the 360° panoramic view. To browse panoramas:

1. Local Storage — Insert the Micro SD card with the containing panorama into the Micro SD card slot of Goggles RE, then preview it in “Local Storage”.
2. Download from the Aircraft Storage — In the DJI GO 4 main screen, enter “Playback > Photo” and select a panorama, tap to synchronize it to the aircraft. When synchronization is complete, you will see a thumbnail of the panorama in the “Aircraft Storage” on Goggles RE. Make sure that Goggles RE is connected with the remote controller, download the panorama to Goggles RE, and then you can browse it in “Local Storage”.

When you select the panorama from the Playback page on Goggles RE, you will first access a thumbnail. Tap the touch panel again to enter the full 360° view.



- Only 720p and 1080p videos recorded by the aircraft can be played from Local Storage or Aircraft Storage.
- Playback is only supported by Mavic series, Spark and Phantom 4 Pro/Advanced series aircrafts. Please ensure the Micro SD card is inserted into the Goggles RE when downloading photos/videos. After that, you can browse them in “Local Storage”.
- When browsing the photos and videos in “Local Storage”, store the files in the Micro SD card according to the directory below:
Videos: DJI_VIDEO in the root or root directory
Photos: DJI_PHOTO in root or root directory
Panoramas: DJI_PANO in the root directory



- Ensure to use the Panorama feature when the aircraft's motors are turned off.
- When using the Goggles RE with the Mavic Pro, if a user plays the video from aircraft storage instead of having a live view, then this video will be displayed on all devices synchronously. DO NOT play aircraft storage videos during flight to ensure safety.

Video Play

Goggles RE support both Micro SD card and HDMI connection to view HD video. For HD video playback:

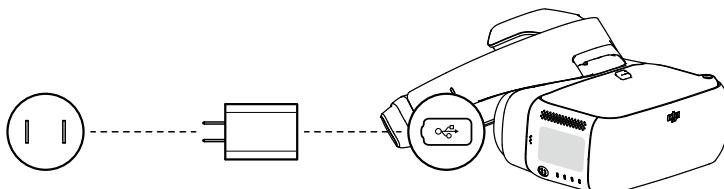
1. Micro SD Card — Insert the Micro SD card with the containing HD video into the Micro SD card slot of Goggles RE, then select “Tools > Playback > Local Storage”.
2. HDMI — Connect the video source to Goggles RE with an HDMI cable and select “Tools > HDMI Input”.



- During video playback, swipe up/down on the touch panel with one finger to adjust volume. Swipe left/right with two fingers for high-speed scrubbing through the video, and with one finger for fine scrubbing.
- Micro SD card video playback is compatible with MP4, MOV, and MKV formats. Please refer to “Specifications” for details.

Charging the Goggles RE

1. Connect the battery charger to a power outlet (100-240 V, 50/60 Hz).
2. With the Goggles RE powered off, connect the charging port on the headband to the charger with the Micro USB cable included.



3. The charging status indicator will go solid red, yellow, and green in that order when charging. The battery level indicators will blink green, indicating current battery levels.
4. The battery is fully charged when the charging status indicator or battery level indicators turn off. Disconnect the Goggles RE from the charger.

Battery Level Indicators While Charging

LED1	LED2	LED3	LED4	Battery Level
				0%~25%
				25%~50%
				50%~75%
				75%~100%
				Fully Charged



- DO NOT charge the Goggles RE when it is powered on to ensure safety.
- When using a non-standard charger, the maximum output voltage must not exceed 12 V.



- The Goggles RE battery is located in the headband. You can connect the headband individually to the charger for charging. The battery is fully charged when the charging status indicator turns off.
- A standard charger is recommended for charging. It takes approximately four hours to fully charge the battery. Other chargers may take longer.
- The Goggles RE and the standard charger featuring the Qualcomm® Quick Charge™ 3.0 technology.

Upgrading Firmware

DJI Assistant 2

Use DJI Assistant 2 to upgrade the Goggles RE.

1. Power on the Goggles RE and connect them to a computer with a Micro USB cable.
2. Launch DJI Assistant 2 and login with a registered DJI account.
3. Select "Goggles RE" and click "Firmware Upgrade" on the left-hand side.
4. Select the firmware version required.
5. DJI Assistant 2 will download and upgrade the firmware automatically.
6. Restart the Goggles RE after the firmware upgrade is complete.

Use DJI Assistant 2 to upgrade the aircraft and remote controller of the Mavic Pro and the Goggles RE simultaneously (only supports connection topology for Standard Mode).

1. Ensure all devices are powered on and that the aircraft is linked with the remote controller.
2. Connect the remote controller to a computer with a Micro USB cable.
3. Launch DJI Assistant 2 and login with a registered DJI account.
4. Select "RC for Mavic Pro" and click "Firmware Upgrade" on the left-hand side.
5. Select the required firmware version.
6. DJI Assistant 2 will download and upgrade the firmware automatically.
7. Restart all devices when the firmware upgrade is complete.

Use DJI Assistant 2 to upgrade the DJI OcuSync Air Unit.

1. When the DJI OcuSync Air Unit is powered on, connects it to a computer with a Micro USB cable.
2. Launch DJI Assistant 2 and login with a registered DJI account.
3. Select "DJI OcuSync Air Unit" and click "Firmware Upgrade" on the left-hand side.
4. Select the firmware version required.
5. DJI Assistant 2 will download and upgrade the firmware automatically.
6. Restart the Air Unit after the firmware upgrade is complete.

DJI GO 4 App

Use the DJI GO 4 app to upgrade the aircraft and remote controller of the Mavic Pro and the Goggles RE simultaneously (only supports connection topology for Standard Mode).

1. Ensure all devices are powered on and that the aircraft is linked with the remote controller.
2. Connect the remote controller with the DJI GO 4 app. A prompt will appear if a new firmware upgrade is available. To start upgrading, connect a mobile device to the Internet and follow the on-screen instructions.
3. Restart all devices when the firmware upgrade is complete.

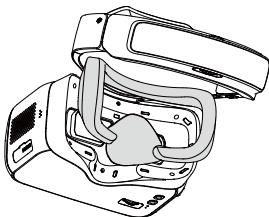
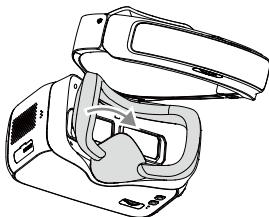
Cleaning and Maintenance

Be sure to unplug the charger from the power outlet before cleaning and ensure that there are no cables connected.

Cleaning the Goggles RE

Wipe and clean the surface of the Goggles RE with a soft clean cloth.

To clean the facial pad, first drag it from the left or right side to the inside, then detach the other parts. Run water over the facial pad, then wipe it with a soft, dry cloth until it is completely dry. Align the protruding part of the facial pad with the holes on the Goggles RE body, then press them together so they are securely attached.



Maintenance of Lenses

Use the cleaning cloth included to wipe the lenses gently.

1. Moisten the cleaning cloth with alcohol or a lens cleaner.
2. Wipe in a circular motion from the center to the outer edges of the lenses.



- DO NOT clean the headband padding with alcohol.
- The lenses are delicate, please clean them gently. DO NOT scratch them as this will damage the overall viewing experience.
- Store the Goggles RE in a dry room at room temperature to avoid damage to the lenses from high temperature and humid environments.

Specifications

DJI Goggles RE	
Weight (Typical)	Goggles RE Body: 502 g Headband: 500 g
Dimensions	Goggles RE Body: 195×155×110 mm Headband (folded): 255×205×92 mm
Screen Size	5 inch×2
Screen Resolution	3840×1080 (single screen: 1920×1080)
Refresh Rate	60 Hz
FOV	85° (single screen)
Interpupillary Distance Range	58 – 70 mm
Communication Frequency	2.4 GHz / 5.8 GHz
Transmitter Power (EIRP)	2.4 GHz: 25.5 dBm (FCC); 18.5 dBm (CE); 19 dBm (SRRC) 5.8 GHz: 25.5 dBm (FCC); 12.5 dBm (CE); 18.5 dBm (SRRC)
Max. Transmission Distance	Same as the aircraft connected
Live View Modes	1080p30, 720p60, 720p30 140 ms (Mavic 2 Series, 720p30, video format: 1080p60) 110 ms (Mavic Pro, 720p60, video format: 720p120) 180 ms (Mavic Air, 720p30, video format: 720p120) 150 ms (Spark, 720p30, video format: 1080p30) 110 ms (Phantom 4 Pro/Pro+ V2.0, 720p60, video format: 720p120) 150 ms (Phantom 4 Pro/Advanced Series, 720p60, video format: 720p60/720p120) 167 ms (Phantom 4, 720p30, video format: 720p60) 140 ms (Inspire 2+X5S, 720p60, video format: 1080p120) 190 ms (Inspire 2+X4S, 720p60, video format: 1080p60)
Min. Video Downlink Latency (near field, free of interference)	MP4 (H.264)
Video Format	MP4, MOV, MKV, AVI, FLV, 3GP, MPG, TS (Video format: H264, H263, MPEG4, MPEG2, MPEG1; Audio format: AAC, AC-3, EAC3, DTS, MP3, MP2, Vorbis, PCM)
I/O Interface	SMA port, Micro USB port, 3.5 mm Audio port, HDMI Type-D port, Micro SD Card slot
HDMI Supported	HDMI 1.4b, HDCP 1.4
Sensors	Gyroscope, Accelerometer, Proximity Sensor
Operating Temperature Range	32° to 104° F (0° to 40° C)
Battery Capacity	9440 mAh
Battery Energy	35.44 Wh
Max. Operating Time	6 hrs
Charger	Input: 100-240 VAC, 50/60 Hz, 0.5 A Output: 5 V = 3 A / 9V = 2A / 12 V = 1.5 A

DJI OcuSync Air System

Weight	Air Unit: 43.7 g; Camera (cable included): 18.2 g Pagoda Antenna: 9.4 g; Cylindrical Antenna: 9.4 g; Dipole Antenna: 4.2 g
Dimensions	Air Unit: 72 × 33 × 14 mm Camera: 29.4 × 28.2 × 22.6 mm
Communication Frequency	2.4 GHz / 5.8 GHz
Transmitter Power (EIRP)	2.4 GHz: 22.5 dBm (FCC); 18.5 dBm (CE); 19 dBm (SRRC) 5.8 GHz: 25.5 dBm (FCC); 12.5 dBm (CE); 25.5 dBm (SRRC)
Live View Modes and Min. Latency	960p50: 70 ms; 720p60: 60 ms; 480p50: 50 ms
Max. Transmission Distance	2.4 GHz: 7 km (FCC); 4 km (CE); 4 km (SRRC) 5.8 GHz: 4 km (FCC); 0.7 km (CE); 4 km (SRRC)
Recommended Frequency Band	FCC: 5.8 GHz; CE: 2.4 GHz; SRRC: 5.8 GHz
Video Format	MP4 (MPEG4)
I/O Interface	S.Bus, Micro USB, PPM, UART, MMCX, Micro SD card slot
Supported Flight Control System	F3, F4, KISS, NAZE
Supported Remote Controller	X9D (Frsky), DEVO 10 (Walkera), T8FG (Futaba), T14SG (Futaba), WTF09SII (WFLY), AT9S (RadioLink)
Operating Temperature Range	32° to 104° F (0° to 40° C)
Input Power	9-16.8 V (3S-4S)
Camera	Sensor: 1/3" CMOS; Effective pixels: 1.2M Lens: 2.65 mm, f/2.0 Lens Group: 6G + IR Shutter: Global shutter ISO: 100 - 3200 FOV: 148° (D); 111° (H); 79.5° (V)



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DJI Support

<http://www.dji.com/support>

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Download the latest version from

www.dji.com/dji-goggles-re

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