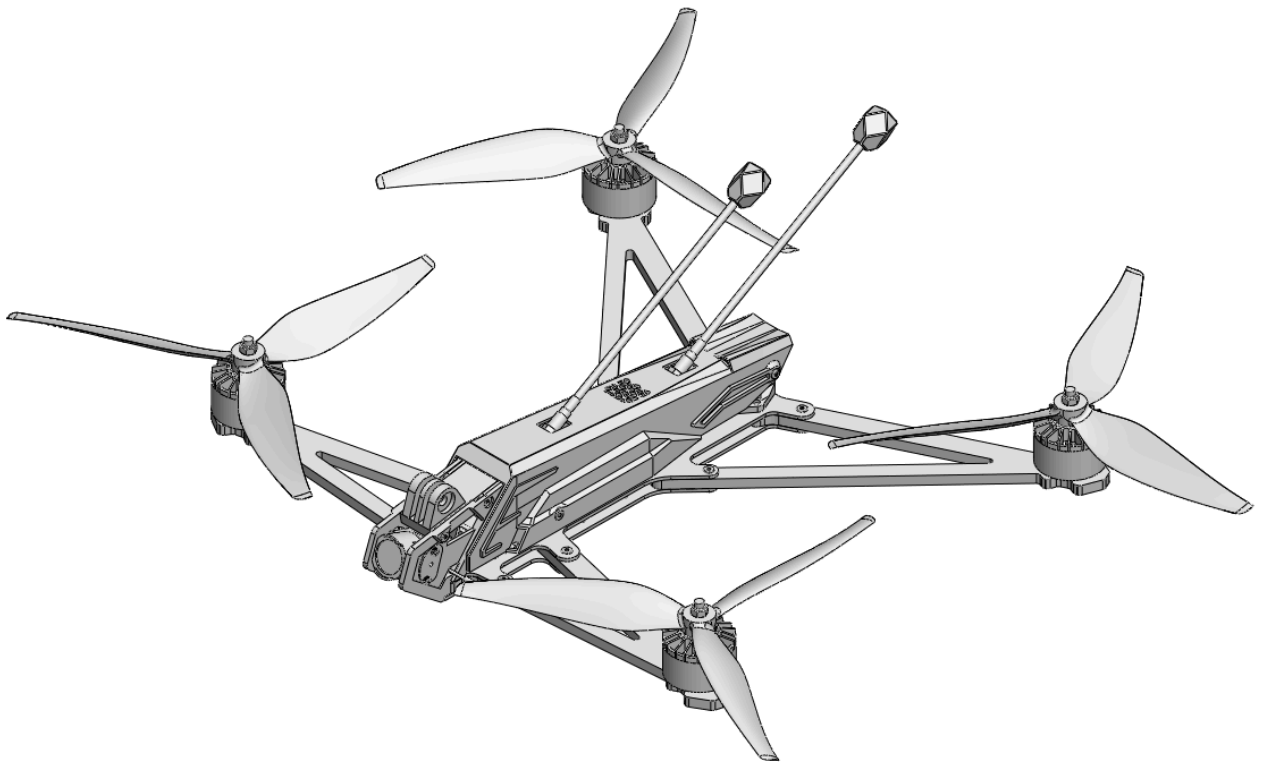




Vulture10 HD

User manual



1. INTRODUCTION

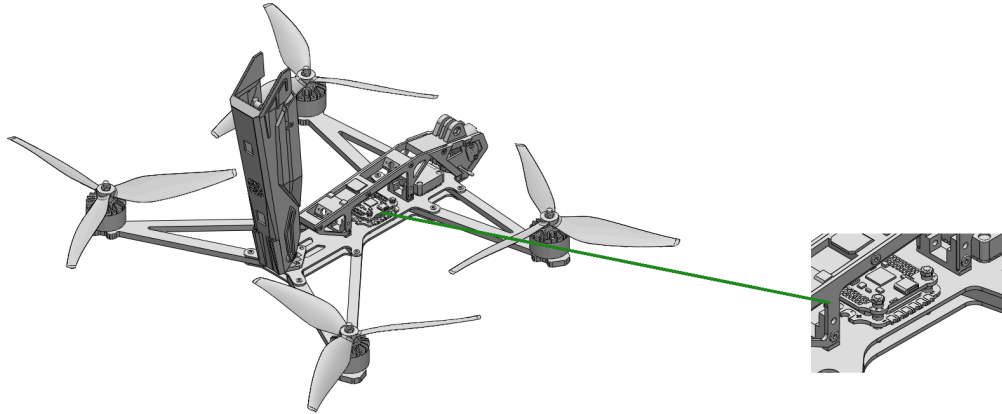
Vulture10 04 is a 10-inch FPV drone designed to deliver powerful performance and exceptional payload capabilities. With its high-performance motors, this drone can carry payloads of up to 3 kg, making it ideal for a wide range of tasks that require heavy lifting. Unlike its analog versions, Vulture10 04 features a digital video transmission system, providing high-definition, low-latency video even over long distances. It is equipped with an advanced flight controller and a powerful video transmitter, ensuring reliable communication across extended ranges. Its efficient design allows for longer flight times, making the Vulture10 04 an excellent choice for demanding FPV enthusiasts and professional operators who prioritize reliability and performance.

Package content:

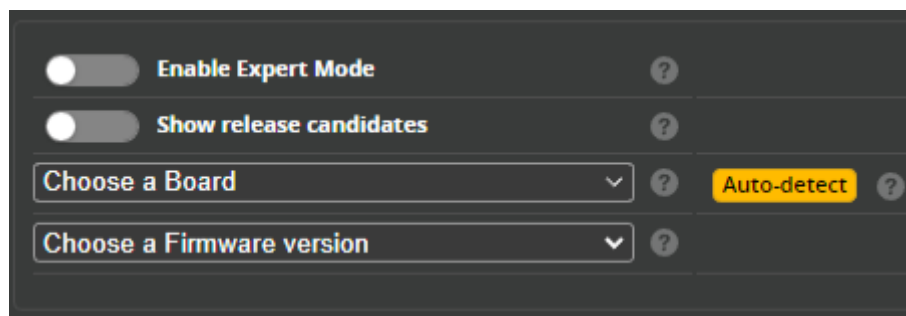
- 1x Vulture10 FPV drone
- 1x Propellers (2 CW + 2 CCW)
- 1x Spare screw set
- 1x USB-C cable

2. UPDATES

Vulture10 O4 is sold with components updated at the time of assembly. We recommend checking for firmware updates. To do this, connect the drone to your computer using a USB-C cable. Enter "Bootloader" mode by holding the "Boot" button on the left side of the flight controller while plugging in the USB cable.



Open Betaflight Configurator. If it does not automatically detect the flight controller, select the correct device manually and click "Update Firmware."



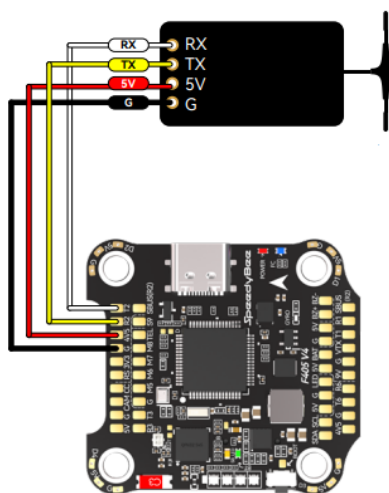
Once connected to the Flight Controller, select the correct board and desired firmware version. Then click the "Load Firmware (Online)" button located at the bottom right corner of the screen. When the yellow "Flash Firmware" button appears, click it to begin updating the Flight Controller.

⚠ Make sure to create a backup of your current firmware before performing any updates!

3. RECEIVER

Vulture10 04 includes a pre-installed ELRS 2.4GHz receiver mounted to the flight controller. Ensure the receiver is connected to the flight controller as shown in the diagram. Connect the drone to your computer via USB-C cable and open the Betaflight Configurator. If Betaflight does not automatically detect the drone, manually select the correct device and click "Connect."

Go to the "Ports" tab, where you'll find a table to assign ports to specific components. Typically, UART2 is used for the receiver—enable the Serial Rx column for that port. UART4 is used for the ESC, so do not disable it, or you will lose motor control.



Identifier	Configuration/MSP	Serial Rx
USB VCP	☐ 115200	☐
UART1	☐ 115200	☐
UART2	☐ 115200	☒
UART3	☐ 115200	☐
UART4	☒ 115200	☐
UART5	☐ 115200	☐
UART6	☐ 115200	☐

Then go to the Receiver tab, where you will find tables and settings that define your controller input. Make sure that "Receiver Mode" is set to Serial (via UART), "Serial Receiver Provider" is set to CRSF. After applying these settings, you can proceed to bind your transmitter to the drone.

Preview



Roll [A] 1500

Pitch [E] 1500

Yaw [R] 1500

Throttle [T] 885

AUX 1 1500

AUX 2 1500

AUX 3 1500

AUX 4 1500

AUX 5 1500

AUX 6 1500

AUX 7 1500

AUX 8 1500

AUX 9 1500

AUX 10 1500

AUX 11 1500

AUX 12 1500

Receiver

Serial (via UART) Receiver Mode

The UART for the receiver must be set to 'Serial Rx' (in the Ports tab)

Select the correct data format from the drop-down, below.

CRSF Serial Receiver Provider

Telemetry

☒ TELEMETRY

RSSI (Signal Strength)

☐ RSSI_ADC

Channel Map

AETR1234

Stick Low Threshold 1050

Stick Center

RC Deadband 0

Yaw Deadband

RC Smoothing

3. RECEIVER

After applying these settings, make sure that both the receiver and transmitter are using the same ELRS firmware version. You can update the receiver's ELRS firmware by downloading and using the ExpressLRS Configurator.

The screenshot shows the 'Firmware version' and 'Target' sections of the ExpressLRS Configurator. The 'Firmware version' section includes a 'Show pre-releases' checkbox and a 'Releases' dropdown menu currently set to '3.5.4'. Below this is the 'RELEASE NOTES' section. The 'Target' section contains two dropdown menus: 'Device category' and 'Device'. The 'Flashing Method' section at the bottom has three radio buttons: 'Betaflight Passthrough' (selected), 'UART (Serial)', and 'Wi-Fi'.

You can update the receiver's ELRS firmware by downloading and using the ExpressLRS Configurator. Select the appropriate firmware version (latest is recommended). Under "Device Category", choose your hardware type, and under "Device", select your receiver model. Connect the drone to your computer, but do not launch Betaflight. For the "Flashing Method", select "Betaflight Passthrough". Below that, under "Manual serial device selection", choose the USB device and click the "Flash" button to begin updating your receiver.

The screenshot shows the 'Actions' and 'Flashing Options' sections of the ExpressLRS Configurator. The 'Actions' section features a 'Manual serial device selection' dropdown menu with a help icon. The 'Flashing Options' section contains two checkboxes: 'Erase before flash' and 'Force Flash'. At the bottom is a blue 'FLASH' button.

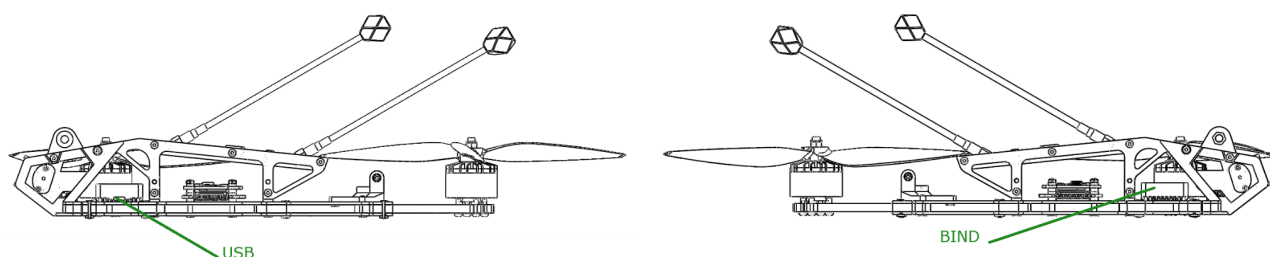
After the update, the receiver's red LED should blink twice repeatedly. This indicates that it is in binding mode and ready to pair with your transmitter. To update the transmitter's ELRS firmware and complete the binding process, refer to your transmitter's user manual.

4. VIDEO TRANSMITTER

Note: Before activation, make sure the propellers are removed. Propellers should only be installed after the aircraft has been bound and Betaflight settings are fully configured. In case of personal injury due to improper operation, you assume full responsibility. Always operate with caution to ensure safety.

DJI O4 AIR UNIT SETUP:

Power on the Vulture10 O4 and DJI Goggles separately. Connect each device to a computer using a USB-C cable, then launch DJI Assistant 2 (Consumer Drones Series) for activation and firmware update. For more information, refer to the DJI O4 Air Unit User Manual.



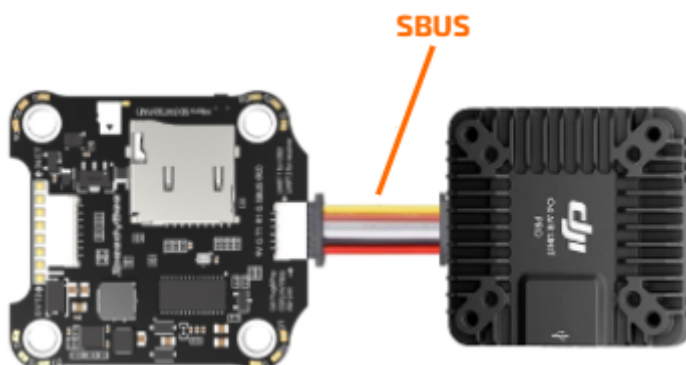
DRONE AND GOGGLES BINDING

Ensure that all devices are updated to the latest firmware versions before starting the binding process.

1. Power on the drone and goggles separately.
2. Press the Air Unit bind button – the status LED on the Air Unit will start flashing red.
3. Press the bind button on the goggles – the goggles will start beeping continuously.
4. Make sure the distance between the Air Unit and the goggles is less than 0.5 meters. Once binding is successful, the Air Unit LED will turn solid green, and the goggles will stop beeping. Image transmission will then function normally.

USING THE AIR UNIT WITH AN ELRS RECEIVER

When using the Air Unit together with an ELRS receiver, some ELRS receivers may not be recognized properly by the flight controller. If you encounter this issue, you need to disconnect the SBUS signal wire from the Air Unit harness. You can use tweezers to carefully remove the SBUS wire from the 6-pin connector, or gently cut the wire and insulate the exposed end properly.



WARNING

- ⚠ Do not use the Air Unit for extended periods in high-temperature environments with poor ventilation – this may cause overheating and loss of video transmission.
- ⚠ When the Air Unit is powered on, it automatically enters low-power mode to avoid overheating, which may reduce video transmission quality. Once the drone takes off or recording starts, the Air Unit automatically switches back to normal mode. Therefore, it's recommended to take off as soon as possible or ensure proper ventilation.
- ⚠ Do not connect the power cable together with the GND wire directly, and do not plug or unplug the cables while the Air Unit is powered – this may damage the equipment.
- ⚠ Make sure you fully understand and comply with local laws and regulations regarding the use of this product.
- ⚠ This product is not intended for children.

DJI Assistant 2 (Consumer Drones Series) supports activation and firmware updates for consumer drone series products.

You can download it here: <https://www.dji.com/avata/downloads>

5. BETAFLIGHT

To begin configuring the drone, remove the propellers from the motors. Launch the Betaflight Configurator and connect the drone to your computer using a USB-C cable. In the “Ports” tab, check whether the ports for different components are correctly assigned. In the “Receiver” tab, verify that the transmitter is functioning properly.

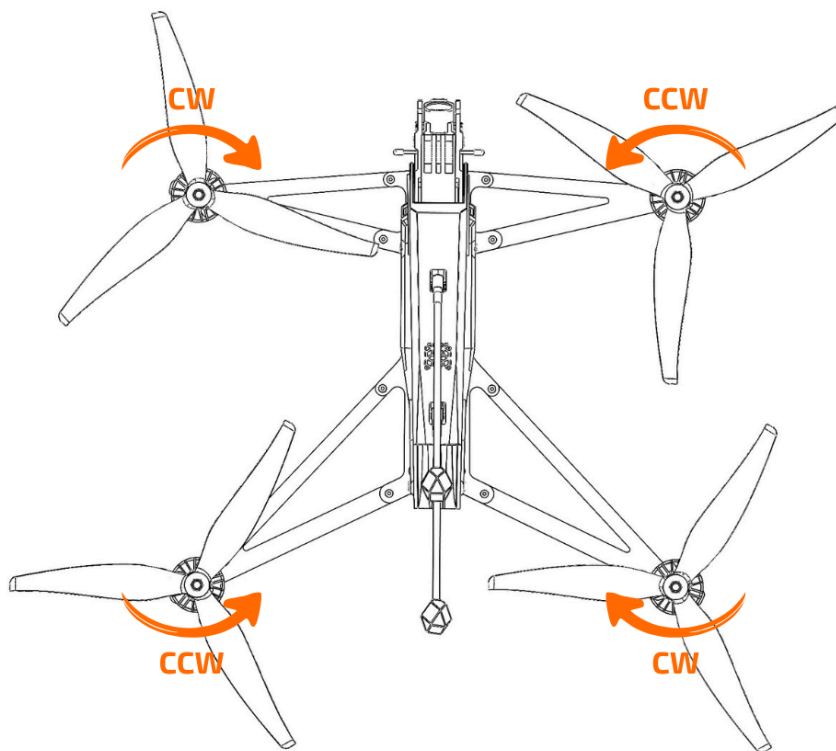
In the “Modes” tab, you will find various function settings that can be activated using the transmitter switches. Typically, the “AUX1” switch is set to arm the drone, while “AUX2” is set to keep the “Angle” flight mode always enabled.



Betaflight is the flight controller software used to configure your drone. It can be downloaded here: <https://betaflight.com/download>

6. PROPELLERS

In the diagram below, you will see the directions in which the drone propellers should be mounted. CW – clockwise, CCW – counterclockwise.



WARNING

- ⚠ Disconnect the battery and remove the propellers before working on the drone!
- ⚠ Handle propellers carefully to avoid injuries!
- ⚠ Avoid contact with spinning propellers!
- ⚠ Before each flight, ensure that the propellers are properly and securely attached to the motors!
- ⚠ Propellers wear out quickly — inspect them frequently for signs of wear, deformation, or broken parts.
- ⚠ This product is not intended for children.

7. PRE-FLIGHT CHECKLIST

- ☐ Make sure that the video and receiver antennas are properly connected before powering on the drone.
- ☐ Ensure that the drone's battery is fully charged and has no visible damage, deformation, or other signs indicating unsafe operation.
- ☐ Ensure that the battery model is compatible with the drone and that the voltage matches the specifications (e.g., for a 6S battery – around 22.2V).
- ☐ Make sure the battery is properly and securely connected, with no visible damage to electronic components.
- ☐ Ensure that the transmitter is turned on and bound to the drone, and that the receiver's indicator light is flashing normally or shows a connected status.
- ☐ Verify that the motors rotate in the correct direction – remove the propellers, connect the drone to the Betaflight Configurator, then move the throttle and check motor rotation in the motor tab.
- ☐ Ensure that the propellers are in good condition and properly mounted onto the motors.

⚠ Fly only in open areas, away from tall buildings or large metal structures. Buildings with heavy reinforcement can interfere with the signal and affect flight performance. It is recommended to fly at least 10 meters away from buildings, poles, obstacles, and similar structures.

⚠ If this is your first flight or a major update has been performed, it is recommended to start with a ground test to ensure that all functions are working properly. These preventive checks help reduce the risk of accidents and ensure safe operation of FPV drones.

8. TAKEOFF/LANDING

TAKEOFF PROCEDURE

Start by setting the throttle stick to the lowest position, then gradually increase it to lift the drone about 10–20 cm off the ground. Once the drone is hovering steadily, reduce the throttle and, as the drone approaches the ground (5–10 cm), power off the drone and the transmitter. Put on your FPV goggles or look at the monitor (e.g., a handheld screen), turn on the transmitter, and slowly increase the throttle so the drone lifts off smoothly.

LANDING PROCEDURE

1. Gradually decrease altitude – before landing, slowly bring the drone down to a safe height, maintaining stable speed and position.
2. Approach the landing zone by carefully maneuvering the drone toward a preselected area – ideally, use a gliding method to better control the descent.
3. Reduce throttle – slowly decrease the throttle so the drone can land gently on the ground.
4. Turn off the drone once it touches the ground or is within 5–10 cm from it. Avoid hard landings, as they may damage the frame or components.
5. Immediately disconnect the battery after landing to prevent injuries.

SAFETY PRECAUTIONS

- Monitor battery charge level: You can check battery status via the OSD information in your FPV goggles or on the monitor. Estimate remaining flight time and ensure sufficient reserve for a safe landing. When a single cell's voltage approaches 3.7 V, it's time to return and land. Over-discharging can permanently damage the battery.
- Be aware of your surroundings: Before landing, make sure the landing area is safe – free of people, animals, or other obstacles.
- Disconnect the battery: After the flight, always disconnect the battery to prevent accidental transmitter signals or unintended power-up, which may cause injuries.

9. GPS RESCUE MODE

The Vulture10 is equipped with a GPS module, which can be used to display information such as speed, distance, and coordinates on the Betaflight OSD screen. However, this drone does not have an active GPS Rescue (Return to Home) or automatic return function.

Flight control remains entirely the responsibility of the pilot, so it is recommended not to fly too far or too high unless you are confident in your signal strength and battery condition. The drone will not return automatically in case of signal loss or other failure.

10. DISCLAIMER

This product is not a toy and requires at least basic knowledge to operate. Begin using it gradually. Before flying the drone, carefully read this manual, as well as the disclaimer and safety guidelines containing important warnings and notes.

⚠ When using the drone in public areas, be cautious and ensure that no people or animals are nearby who could be injured by accidental contact.

⚠ The manufacturer is not responsible for any damage or accidents caused by improper use or modifications that do not comply with the manufacturer's instructions.

⚠ Before flying, check your local laws and restrictions regarding drone usage in your country or region.

⚠ Flying in strong winds, rain, or poor visibility may pose risks and damage the drone's components. The manufacturer is not liable for damage resulting from such conditions.

⚠ The user must ensure that video recording and data collection do not violate privacy laws or the rights of third parties.

⚠ Recommended for users aged 14 and older, with adult supervision by someone knowledgeable in FPV systems.

This device complies with the European Union CE requirements. It is used in accordance with safety standards EN ISO 12100 and EN 61000-6-1.

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