U.S. Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

May 12, 2015

Exemption No. 11560
Regulatory Docket No. FAA–2015–0417

Ms. Terry L. Carbonell
Attorney for the Petitioner
100 South Airport Road
Tavernier, FL 33070

Dear Ms. Carbonell:

This letter is to inform you that we have granted your request for exemption. It transmits our decision, explains its basis, and gives you the conditions and limitations of the exemption, including the date it ends.

By letter dated February 19, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Skyview Films, LLC (hereinafter petitioner or operator) for an exemption. The exemption would allow the petitioner to operate an unmanned aircraft system (UAS) to conduct aerial videography.

See Appendix A for the petition submitted to the FAA describing the proposed operations and the regulations that the petitioner seeks an exemption.

The FAA has determined that good cause exists for not publishing a summary of the petition in the Federal Register because the requested exemption would not set a precedent, and any delay in acting on this petition would be detrimental to the petitioner. However, the FAA received one comment in support of the petition made to the docket.

Airworthiness Certification

The UAS proposed by the petitioner is a DJI Phantom II.

In accordance with the statutory criteria provided in Section 333 of Public Law 112−95 in reference to 49 U.S.C. § 44704, and in consideration of the size, weight, speed, and limited operating area associated with the aircraft and its operation, the Secretary of Transportation

has determined that this aircraft meets the conditions of Section 333. Therefore, the FAA finds that relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*, and any associated noise certification and testing requirements of part 36, is not necessary.

The Basis for Our Decision

You have requested to use a UAS for aerial data collection. The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in your petition. In Grants of Exemption Nos. 11062 to Astraeus Aerial (*see* Docket No. FAA−2014−0352), 11109 to Clayco, Inc. (*see* Docket No. FAA−2014−0507), 11112 to VDOS Global, LLC (*see* Docket No. FAA−2014−0382), and 11213 to Aeryon Labs, Inc. (*see* Docket No. FAA−2014−0642), the FAA found that the enhanced safety achieved using an unmanned aircraft (UA) with the specifications described by the petitioner and carrying no passengers or crew, rather than a manned aircraft of significantly greater proportions, carrying crew in addition to flammable fuel, gives the FAA good cause to find that the UAS operation enabled by this exemption is in the public interest.

Having reviewed your reasons for requesting an exemption, I find that—

- They are similar in all material respects to relief previously requested in Grant of Exemption Nos. 11062, 11109, 11112, and 11213;
- The reasons stated by the FAA for granting Exemption Nos. 11062, 11109, 11112, and 11213 also apply to the situation you present; and
- A grant of exemption is in the public interest.

Our Decision

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. 106(f), 40113, and 44701, delegated to me by the Administrator, Skyview Films, LLC is granted an exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a), 91.7(a), 91.119(c), 91.121, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), to the extent necessary to allow the petitioner to operate a UAS to perform aerial data collection. This exemption is subject to the conditions and limitations listed below.

Conditions and Limitations

In this grant of exemption, Skyview Films, LLC is hereafter referred to as the operator.

Failure to comply with any of the conditions and limitations of this grant of exemption will be grounds for the immediate suspension or rescission of this exemption.

1. Operations authorized by this grant of exemption are limited to the DJI Phantom II when weighing less than 55 pounds including payload. Proposed operations of any other aircraft will require a new petition or a petition to amend this exemption.

2. Operations for the purpose of closed-set motion picture and television filming are not permitted.

3. The UA may not be operated at a speed exceeding 87 knots (100 miles per hour). The exemption holder may use either groundspeed or calibrated airspeed to determine compliance with the 87 knot speed restriction. In no case will the UA be operated at airspeeds greater than the maximum UA operating airspeed recommended by the aircraft manufacturer.

4. The UA must be operated at an altitude of no more than 400 feet above ground level (AGL). Altitude must be reported in feet AGL.

5. The UA must be operated within visual line of sight (VLOS) of the PIC at all times. This requires the PIC to be able to use human vision unaided by any device other than corrective lenses, as specified on the PIC's FAA-issued airman medical certificate or U.S. driver's license.

6. All operations must utilize a visual observer (VO). The UA must be operated within the visual line of sight (VLOS) of the PIC and VO at all times. The VO may be used to satisfy the VLOS requirement as long as the PIC always maintains VLOS capability. The VO and PIC must be able to communicate verbally at all times; electronic messaging or texting is not permitted during flight operations. The PIC must be designated before the flight and cannot transfer his or her designation for the duration of the flight. The PIC must ensure that the VO can perform the duties required of the VO.

7. This exemption and all documents needed to operate the UAS and conduct its operations in accordance with the conditions and limitations stated in this grant of exemption, are hereinafter referred to as the operating documents. The operating documents must be accessible during UAS operations and made available to the Administrator upon request. If a discrepancy exists between the conditions and limitations in this exemption and the procedures outlined in the operating documents, the conditions and limitations herein take precedence and must be followed. Otherwise, the operator must follow the procedures as outlined in its operating documents. The operator may update or revise its operating documents. It is the operator's responsibility to track such revisions and present updated and revised documents to the Administrator or any law enforcement official upon request. The operator must also present updated and revised documents if it petitions for extension or amendment to this grant of exemption. If the operator determines that any update or revision would affect the basis upon which the FAA granted this exemption, then

the operator must petition for an amendment to its grant of exemption. The FAA's UAS Integration Office (AFS−80) may be contacted if questions arise regarding updates or revisions to the operating documents.

8. Any UAS that has undergone maintenance or alterations that affect the UAS operation or flight characteristics, e.g., replacement of a flight critical component, must undergo a functional test flight prior to conducting further operations under this exemption. Functional test flights may only be conducted by a PIC with a VO and must remain at least 500 feet from other people. The functional test flight must be conducted in such a manner so as to not pose an undue hazard to persons and property.

9. The operator is responsible for maintaining and inspecting the UAS to ensure that it is in a condition for safe operation.

10. Prior to each flight, the PIC must conduct a pre-flight inspection and determine the UAS is in a condition for safe flight. The pre-flight inspection must account for all potential discrepancies, e.g., inoperable components, items, or equipment. If the inspection reveals a condition that affects the safe operation of the UAS, the aircraft is prohibited from operating until the necessary maintenance has been performed and the UAS is found to be in a condition for safe flight.

11. The operator must follow the UAS manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the aircraft and aircraft components.

12. Each UAS operated under this exemption must comply with all manufacturer safety bulletins.

13. Under this grant of exemption, a PIC must hold either an airline transport, commercial, private, recreational, or sport pilot certificate. The PIC must also hold a current FAA airman medical certificate or a valid U.S. driver's license issued by a state, the District of Columbia, Puerto Rico, a territory, a possession, or the Federal government. The PIC must also meet the flight review requirements specified in 14 CFR § 61.56 in an aircraft in which the PIC is rated on his or her pilot certificate.

14. The operator may not permit any PIC to operate unless the PIC demonstrates the ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption, including evasive and emergency maneuvers and maintaining appropriate distances from persons, vessels, vehicles and structures. PIC qualification flight hours and currency must be logged in a manner consistent with 14 CFR § 61.51(b). Flights for the purposes of training the operator's PICs and VOs (training, proficiency, and experience-building) and determining the PIC's ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption are permitted under the terms of this exemption. However,

training operations may only be conducted during dedicated training sessions. During training, proficiency, and experience-building flights, all persons not essential for flight operations are considered nonparticipants, and the PIC must operate the UA with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.

15. UAS operations may not be conducted during night, as defined in 14 CFR § 1.1. All operations must be conducted under visual meteorological conditions (VMC). Flights under special visual flight rules (SVFR) are not authorized.

16. The UA may not operate within 5 nautical miles of an airport reference point (ARP) as denoted in the current FAA Airport/Facility Directory (AFD) or for airports not denoted with an ARP, the center of the airport symbol as denoted on the current FAA-published aeronautical chart, unless a letter of agreement with that airport's management is obtained or otherwise permitted by a COA issued to the exemption holder. The letter of agreement with the airport management must be made available to the Administrator or any law enforcement official upon request.

17. The UA may not be operated less than 500 feet below or less than 2,000 feet horizontally from a cloud or when visibility is less than 3 statute miles from the PIC.

18. If the UAS loses communications or loses its GPS signal, the UA must return to a pre-determined location within the private or controlled-access property.

19. The PIC must abort the flight in the event of unpredicted obstacles or emergencies.

20. The PIC is prohibited from beginning a flight unless (considering wind and forecast weather conditions) there is enough available power for the UA to conduct the intended operation and to operate after that for at least five minutes or with the reserve power recommended by the manufacturer if greater.

21. Air Traffic Organization (ATO) Certificate of Waiver or Authorization (COA). All operations shall be conducted in accordance with an ATO-issued COA. The exemption holder may apply for a new or amended COA if it intends to conduct operations that cannot be conducted under the terms of the attached COA.

22. All aircraft operated in accordance with this exemption must be identified by serial number, registered in accordance with 14 CFR part 47, and have identification (N−Number) markings in accordance with 14 CFR part 45, Subpart C. Markings must be as large as practicable.

23. Documents used by the operator to ensure the safe operation and flight of the UAS and any documents required under 14 CFR §§ 91.9 and 91.203 must be available to the PIC at the Ground Control Station of the UAS any time the aircraft is operating.

These documents must be made available to the Administrator or any law enforcement official upon request.

24. The UA must remain clear and give way to all manned aviation operations and activities at all times.

25. The UAS may not be operated by the PIC from any moving device or vehicle.

26. All Flight operations must be conducted at least 500 feet from all nonparticipating persons, vessels, vehicles, and structures unless:
    a. Barriers or structures are present that sufficiently protect nonparticipating persons from the UA and/or debris in the event of an accident. The operator must ensure that nonparticipating persons remain under such protection. If a situation arises where nonparticipating persons leave such protection and are within 500 feet of the UA, flight operations must cease immediately in a manner ensuring the safety of nonparticipating persons; and
    b. The owner/controller of any vessels, vehicles or structures has granted permission for operating closer to those objects and the PIC has made a safety assessment of the risk of operating closer to those objects and determined that it does not present an undue hazard.

    The PIC, VO, operator trainees or essential persons are not considered nonparticipating persons under this exemption.

27. All operations shall be conducted over private or controlled-access property with permission from the property owner/controller or authorized representative. Permission from property owner/controller or authorized representative will be obtained for each flight to be conducted.

28. Any incident, accident, or flight operation that transgresses the lateral or vertical boundaries of the operational area as defined by the applicable COA must be reported to the FAA's UAS Integration Office (AFS−80) within 24 hours. Accidents must be reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: www.ntsb.gov.

If this exemption permits operations for the purpose of closed-set motion picture and television filming and production, the following additional conditions and limitations apply.

29. The operator must have a motion picture and television operations manual (MPTOM) as documented in this grant of exemption.

30. At least 3 days before aerial filming, the operator of the UAS affected by this exemption must submit a written Plan of Activities to the local Flight Standards District Office (FSDO) with jurisdiction over the area of proposed filming. The 3-day

notification may be waived with the concurrence of the FSDO. The plan of activities must include at least the following:

a. Dates and times for all flights;
b. Name and phone number of the operator for the UAS aerial filming conducted under this grant of exemption;
c. Name and phone number of the person responsible for the on-scene operation of the UAS;
d. Make, model, and serial or N−Number of UAS to be used;
e. Name and certificate number of UAS PICs involved in the aerial filming;
f. A statement that the operator has obtained permission from property owners and/or local officials to conduct the filming production event; the list of those who gave permission must be made available to the inspector upon request;
g. Signature of exemption holder or representative; and
h. A description of the flight activity, including maps or diagrams of any area, city, town, county, and/or state over which filming will be conducted and the altitudes essential to accomplish the operation.

31. Flight operations may be conducted closer than 500 feet from participating persons consenting to be involved and necessary for the filming production, as specified in the exemption holder's MPTOM.

Unless otherwise specified in this grant of exemption, the UAS, the UAS PIC, and the UAS operations must comply with all applicable parts of 14 CFR including, but not limited to, parts 45, 47, 61, and 91.

This exemption terminates on May 31, 2017, unless sooner superseded or rescinded.

Sincerely,

/s/
John S. Duncan
Director, Flight Standards Service

Enclosures

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February 19, 2015
US Department of Transportation
Docket Management System
1200 New Jersey Ave. SE
Washington DC 20590

Re: Petition of Skyview Films LLC for Exemption pursuant to
Section 333 of the FAA Modernization and Reform Act of 2012

Gentlemen:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 and 14 C.F.R. pt. 11 (2014), Skyview Films, LLC ("Skyview") hereby applies for an exemption from the Federal Aviation Regulations (FARs) hereafter identified to allow commercial use of small unmanned aircraft systems (UAS) in the National Airspace System.

This exemption is in accordance with the provisions in the petition for exemption, the Skyview Films UAS Aerial Video Flight Operations Manual (Skyview Operations Manual) and the Phantom II User Manual and any other requirement as established by the FAA.

If you have any questions regarding this Petition or require additional information please do not hesitate to contact me.

Kind regards,

Terry L Carbonell

TERRY L. CARBONELL
Attorney for Petitioner

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GLOSSERY OF ABBREVIATIONS

AGL	Above Ground Level
ATC	Air Traffic Control
COA	Certificate of Authorization
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
NAS	National Airspace System
PIC	Pilot in Command
Section 333	FAA Modernization and Reform Act of 2012, Section 333
UAS	Unmanned Aircraft Systems
VFR	Visual Flight Rules
VLOS	Visual Line of Sight
VMC	Visual Meteorological Conditions
VO	Visual Observer

SUMMARY

Skyview Films, LLC ("Skyview") seeks an exemption from the requirements of 14 CFR §§ 61.113(a) and (b), 91.7(a), 91.119(b) and (c), 91.121, 91.151(a), 91.405(a) and (b), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b). The exemption will permit Skyview to operate a UAS over certain areas throughout the United States, while keeping documents required by the regulations at the ground control station and immediately accessible to the PIC.

BACKGROUND

Over the past 20 years, the principals of Skyview have been separately in the business of Commercial Video and Film for the Real Estate Market, Public Broadcast Television, Video/Film Contractors, Tourism industry and Native American Documentaries for Federally Recognized Tribes in the US. With the introduction of the UAS technology, Skyview was incorporated and desires to offer aerial videography through the use of the UAS Phantom II manufactured by DJI. Skyview has 2 Phantom II units currently being registered with the FAA under registration numbers N735SF and N736SF. Skyview has plans to add 2 additional units, registered under reserved numbers N737SF and N738SF. Registration numbers will be placed in accordance with §45.29(f) and will be as large as possible on the fuselage of the UAS.

Skyview has received numerous requests from real estate professionals, construction professionals and the motion picture industry for aerial videography services. Such services are currently unavailable to these industries without the use of manned aircraft, which poses a significant risk to the pilots and videographers participating in the video production. The use of UAS will eliminate the hazards associated with manned flight. Additionally, use of videography in the mainstream real estate market has been cost prohibitive, depriving the average homeowner the opportunities afforded more affluent homeowners: video "tours" of their homes and surrounding area for marketing and sales. Specific examples of missions that Skyview seeks to accept are:

(a) Videography of single family and multi-family dwelling units.
(b) Videography of residential, high rise and commercial structures under construction, including roof inspections.
(c) Videography of television programs on set and outdoors in a controlled environment.
(d) Videography of livestock in ranches and crop monitoring.
(e) Videography monitoring of dangerous sea-life to protect beachgoers from large predators during migration season.
(f) Aerial videography for visitor and convention bureaus and production of public service announcements.

Skyview's chief pilot has extensive experience in the use of UAS technology in video production. Skyview has developed operational protocol, including minimum flight time, training requirements and currency requirements for PICs to enhance the safety of UAS flight and integration of UAS in the NAS. Granting Skyview's petition comports with the Secretary of Transportation's (the FAA Administrator's) responsibilities and authority to not only integrate UAS into the NAS, but to "...establish requirements for the safe operation of such aircraft systems [UAS's] in the national airspace system" under Section 333(c) of the Reform Act specific to the use of UAS's for real estate, construction and public interest functions. Skyview will conduct their operations in compliance with the procedures described in their operation manual and as otherwise directed by the FAA.

NAME & ADDRESS OF PETITIONER

The name and address of the Petitioner is:

SKYVIEW FILMS, LLC
5310 Tyler Street
Hollywood, FL 33021
Phone: (786) 306-6580

The point of contact for this Petition and specific contact information is:

Terry L. Carbonell, Esquire
Attorney for Petitioner
100 S. Airport Rd.
Tavernier, FL 33070
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PETITION FOR EXEMPTION & DISCUSSION

Petitioner, **SKYVIEW FILMS, LLC**, by and through its undersigned counsel, pursuant to the provisions of 14 CFR §11.61 and Section 333, hereby petitions the Administrator for exemption from the requirements of 14 CFR §§ 61.113(a) and (b), 91.7(a), 91.119(b) and (c), 91.121, 91.151(a), 91.405(a) and (b), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b).

Request for exemption from 14 CFR 61.113(a) and (b)

§61.113 Private pilot privileges and limitations: Pilot in command.
(a) Except as provided in paragraphs (b) through (h) of this section, no person who holds a private pilot certificate may act as pilot in command of an aircraft that is carrying passengers or property for compensation or hire; nor may that person, for compensation or hire, act as pilot in command of an aircraft.
(b) A private pilot may, for compensation or hire, act as pilot in command of an aircraft in connection with any business or employment if:
(1) The flight is only incidental to that business or employment; and
(2) The aircraft does not carry passengers or property for compensation or hire.

Under current regulations, civil operations for compensation or hire require a PIC holding a commercial pilot certificate per 14 CFR 61. Based on the private pilot limitations in accordance with pertinent parts of 14 CFR 61.113(a) and (b), a pilot holding a private pilot certificate cannot act as a PIC of an aircraft for compensation or hire unless the flight is only incidental to a business or employment. However, in Grant of Exemption No. 11062 to Astraeus Aerial (Astraeus), the FAA determined that a PIC with a private pilot certificate operating the Astraeus UAS would not adversely affect operations in the NAS or present a hazard to persons or property on the ground.

The petition of Skyview does not differ significantly from the situation described in Grant of Exemption No. 11062 (Astraeus) and Exemption No. 11138 (Trudeau). The petitioner plans to operate in the NAS over private property while also limiting access to the property at times he is operating the UAS. Given: 1) the similar nature of the Skyview's proposed operating environment to that of Astraeus and Trudeau, 2) the parallel nature of private pilot aeronautical knowledge requirements to those of commercial, and 3) the airmanship skills necessary to operate the UAS, the additional manned airmanship experience of a commercially certificated pilot would not correlate to the airmanship skills necessary for the Skyview's proposed operations.

The FAA in Exemption No. 11138 (Trudeau) recognized that given the relative size, weight, speed and operating parameters of the proposed UAS operations and its accompanying reduction in risk to persons and property when compared to manned operations, these minimum requirements as stated in Exemption No. 11062 (Astreaus) should be reduced, but not eliminated. UAS operators still need to establish airmanship skills in order to meet the conditions and limitations listed below such as the ability to maneuver near but maintain specific distances from persons and property, respond to unexpected emergencies, or avoid objects as well as the ability to avoid potential conflicts with manned aircraft. In consideration of the above, the FAA determined that there is an appropriate level of pilot flight hours necessary to qualify the PIC for the Skyview's type of proposed operations.

Skyview is responsible for assessing its operations and identifying any additional skills required to operate safely under normal and abnormal conditions. Normal condition skills may include the ability to maintain altitude, maintain VLOS, and navigational skills. Abnormal condition skills may include the ability to avoid obstacles, avoid air traffic, and respond to loss of link. In a manner consistent with 14 C.F.R. § 61.51(b), Skyview has established minimum PIC requirements, continued training and skills assessment and evaluation by the chief pilot. Skyview Operations Manual requires all PICs to have a current third class medical certificate, and a private or higher pilot certificate, at least 25 hours of total time as a UAS rotorcraft pilot including at least 10 hours logged as a UAS pilot with a

multi-rotor UAS and a minimum of 5 hours as a UAS pilot operating the same make and model of UAS to be used for Skyview missions. Additionally, the PIC must accomplish 3 take-offs and landings in the preceding 90 days and 3 return to home emergency procedures within the preceding 30 days for currency purposes.

Request for exemption from 14 CFR 91.7(a)

§91.7 Civil aircraft airworthiness.
(a) No person may operate a civil aircraft unless it is in an airworthy condition.

Skyview's aircraft will be registered but will not require an airworthiness certificate as contemplated by the provisions of 14 CFR part 21 or 23 so compliance with §91.7 will not be accomplished through traditional means. Skyview will maintain the manufactures operating annual in addition to its own company operations manual. Skyview submits that compliance with these operating documents will be sufficient means for determining an "airworthy condition".

Request for exemption from 14 CFR 91.119(b) and (c)

§91.119 Minimum safe altitudes: General.
Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:
(b) Over congested areas. Over any congested area of a city, town, or settlement, or over any open air assembly of persons, an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.
(c) Over other than congested areas. An altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.

Determination of a definition of "congested area" becomes a bit more difficult when dealing with UAS operation, especially where the UAS has a gross weight of approximately 3 pounds. It can certainly be said that a "congested area" would include areas where there is a concentration of people or traffic under the flight path of the UAS or where there is a dense concentration of buildings under the flight path of the UAS. There are areas,

however, within the traditional "congested area" for purposes of manned flight that would be inappropriate to exclude from the realm of UAS flight. Such areas would include:

(a) Construction sites – a defined and confined area generally protected from the general public where participating people (construction workers) are protected from overhead hazards and work in an environment where such hazards routinely exist.

(b) Residential dwelling units – a defined area that could be easily blocked to restrict the access by the general public. Participating people would be limited to UAS flight crew and homeowner/realtor.

The superior maneuverability of the small UAS make them ideal candidate for operations in smaller confined spaces where larger certificated aircraft cannot maneuver.

Relief from § 91.119(b) is necessary in limited circumstances such as construction sites or other venues where participating persons routinely operate in an environment where known hazards exist and they use protective equipment (hard hats and eye protection) for protection from those hazards. Additional precautions are stated in Skyview's Operations Manual:

> "*Prior to the start of any operation under the provisions of this manual, the pilot in command shall brief all participating personnel. The briefing will include: all procedures, the risks involved, emergency procedures, and safeguards to be followed during the filming production event. Personnel will also be briefed on additional mission provisions that may be issued by the FAA Representatives, local law enforcement personnel, the chief pilot or other individual that has geographic responsibility for the operational area, including the location of boundaries or time limits. The briefing shall specifically include:*
>
> - *Authorization for video certificate of waiver and the attached special provisions*
> - *Procedures contained in this Operations manual*
> - *Plan of activities*
> - *Radio Communications*
> - *Take-off procedures*
> - *Aviation activities to be conducted during the filming production event*
> - *Approach and landing procedures*
> - *Recall procedures*
> - *Emergency procedures*
> - *Risks to participating personnel*
> - *How to control non-participating persons*"

Relief from § 91.119(c) is necessary because the aircraft will be operated at altitudes below 400' AGL. Skyview Pre-flight Check List provides the mechanism for obstacle location and avoidance:

"*Check Area for Obstacles*

- Note location of public and private use airports and heliports and medical heliports and helipads
- Inspect flight zone for utility poles, transmission and guy wires, trees and Other vertical obstacles to flight
- Inspect traffic patterns and flow of adjacent roadways and parking areas and ensure traffic flow will not be impacted, nor drivers distracted
- Inspect flight zone for suitability of adjacent public viewing area protected from flight zone
- Locate and define take-off and landing zone (LZ)"

The Operations Manual additionally provides:

"*The certificate holder shall ensure that no persons are allowed within 100 feet of the flight zone except those consenting to be involved and those necessary for the video production. This provision may be modified if the level of safety can be achieved and the Administrator has approved. For example, an equivalent level of safety may be determined by an evaluation of the video production area to note terrain features, obstructions, buildings, etc. Such barriers may protect nonparticipating persons (observers, the public, news media, etc.) from debris in the event of an accident."*

Finally, in support of exemption from both 91.119(b) and (c), Skyview has established and the PICs are required to practice and become proficient in executing emergency procedures. The Skyview Pre-flight Check List provides:

"*1. Lost sight of UAS – Perform Return Home Procedure*
2. UAS out of control – Perform Return Home Procedure
3. UAS Battery low – Return UAS to LZ immediately
4. IMMEDIATELY land UAS at nearest safe ground location if:
- manned or other unmanned aircraft is in the vicinity of flight zone
- unauthorized persons or equipment enter the flight zone
- hazardous weather conditions develop
- bird flock enters the flight zone
- traffic obstruction occurs
- PIC becomes distracted believes safety is compromised for any reason"

Request for exemption from 14 CFR 91.121

§91.121 Altimeter settings.
(a) Each person operating an aircraft shall maintain the cruising altitude or flight level of that aircraft, as the case may be, by reference to an altimeter that is set, when operating—
(1) Below 18,000 feet MSL, to—
(i) The current reported altimeter setting of a station along the route and within 100 nautical miles of the aircraft;
(ii) If there is no station within the area prescribed in paragraph (a)(1)(i) of this section, the current reported altimeter setting of an appropriate available station; or
(iii) In the case of an aircraft not equipped with a radio, the elevation of the departure airport or an appropriate altimeter setting available before departure.

The Phantom II unit is equipped with GPS derived altitude capabilities. The FAA discussion in Exemption No. 11138 (Trudeau) is applicable to Skyview operations. Due to the limited altitude of the proposed operations (400' AGL and below), it is requested that operational altitudes be reported to ATC in terms of AGL.

Request for exemption from 14 CFR 91.151

§91.151 Fuel requirements for flight in VFR conditions.
(a) No person may begin a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed—
(1) During the day, to fly after that for at least 30 minutes.

The operating documents, specifically, the Phantom II User Manual, indicate that two low-voltage (low battery) alerts are issued - warning that the first alert should be followed (30% - low battery level warning). Also, the UAS has an automated function which results in immediate landing when a low battery is detected. The Skyview Check List provides for the PIC to continuously monitor the UAS battery and prohibit operation with lower than 30% battery life remaining. These factors should provide the FAA with sufficient reason to grant the relief from 14 CFR 91.151(a) and prohibit the PIC from beginning a flight unless (considering wind and forecast weather conditions) there is enough power to fly to the first point of intended landing and, assuming normal cruising speed, land the UA with 30% battery power remaining.

Request for exemption from 14 CFR 91.405(a), §91.407(a), §91.409(a), §91.417(a) & (b)

§91.405 Maintenance required.

Each owner or operator of an aircraft—

(a) Shall have that aircraft inspected as prescribed in subpart E of this part and shall between required inspections, except as provided in paragraph (c) of this section, have discrepancies repaired as prescribed in part 43 of this chapter.

§91.407 Operation after maintenance, preventive maintenance, rebuilding, or alteration.

(a) No person may operate any aircraft that has undergone maintenance, preventive maintenance, rebuilding, or alteration unless—

(1) It has been approved for return to service by a person authorized under §43.7 of this chapter;

§91.409 Inspections.

(a) Except as provided in paragraph (c) of this section, no person may operate an aircraft unless, within the preceding 12 calendar months, it has had—

(1) An annual inspection in accordance with part 43 of this chapter and has been approved for return to service by a person authorized by §43.7 of this chapter; or

(2) An inspection for the issuance of an airworthiness certificate in accordance with part 21 of this chapter.

§91.417 Maintenance records.

(a) Except for work performed in accordance with §§91.411 and 91.413, each registered owner or operator shall keep the following records for the periods specified in paragraph (b) of this section:

(1) Records of the maintenance, preventive maintenance, and alteration and records of the 100-hour, annual, progressive, and other required or approved inspections, as appropriate, for each aircraft (including the airframe) and each engine, propeller, rotor, and appliance of an aircraft. The records must include—

(i) A description (or reference to data acceptable to the Administrator) of the work performed; and

(ii) The date of completion of the work performed; and

(iii) The signature, and certificate number of the person approving the aircraft for return to service.

(2) Records containing the following information:

(i) The total time in service of the airframe, each engine, each propeller, and each rotor.

(ii) The current status of life-limited parts of each airframe, engine, propeller, rotor, and appliance.

(iii) The time since last overhaul of all items installed on the aircraft which are required to be overhauled on a specified time basis.

(iv) The current inspection status of the aircraft, including the time since the last inspection required by the inspection program under which the aircraft and its appliances are maintained.

(v) The current status of applicable airworthiness directives (AD) and safety directives including, for each, the method of compliance, the AD or safety directive number and revision date. If the AD or safety directive involves recurring action, the time and date when the next action is required.

The above maintenance provisions apply to aircraft that have an airworthiness certificate. The aircraft operated by Skyview will not have an airworthiness certificate so these regulations should not apply to Skyview. Skyview proposes that the PIC be the primary inspector in lieu of the maintenance personnel contemplated by the above regulation. Prior to each flight the PIC will inspect the aircraft to assure that it is in airworthy condition. Any maintenance issues or replacement of consumable items shall be accomplished prior to the initiation of flight and documented in accordance with the Operations Manual and check list. Under no circumstances shall the UAS be operated if there is any question as to the airworthiness of the aircraft. Due to the relatively small size and lack of complexity of the Phantom II unit, the PIC can ensure the proper level of safety for aircraft airworthiness.

UAS DESCRIPTION

General Features.

- Ready to Fly, Multifunctional Quad-rotor System
- Customized H3-3D & H4-3D Gimbal Support
- GPS Assisted Precision Flight and Stable Hovering
- 25min Flight Time & Smart Battery
- Auto Return-to-Home & Landing
- Advanced Power Management
- Intelligent Orientation Control (IOC)
- Self-tightening Propellers
- First Person Viewing Video Downlink

Aircraft Characteristics.

Weight (Battery & Propellers Included)	1000g
Hover Accuracy (Ready To Fly)	Vertical: 0.8m Horizontal: 2.5m

Max Yaw Angular Velocity	200°/s
Max Tilt Angle	35°
Max Ascent / Descent Speed	Ascent: 6m/s; Descent: 2m/s
Max Flight Speed	15m/s(Not Recommended)
Diagonal Length	350mm
Flight Time	25mins
Take-Off Weight	≤1300g
Operating Temperature	-10°C ~ 50°C
Supported Battery	DJI Smart Battery

Remote Control.

Operating Frequency	2.4GHz ISM
Communication Distance (Open Area)	1000m
Receiver Sensitivity (1%PER)	-97dBm
Working Current/Voltage	120 mA@3.7V
Built-In LiPo Battery Working Current/Capacity	3.7V, 2000mAh

Battery.

Type	3S LiPo
Capacity	5200mAh, 11.1V
Charging Environment Range	0℃to 40℃
Discharging Environment Range	-20℃to 50℃

PILOT QUALIFICATIONS

Skyview Operations Manual requires all PICs to have the following qualifications:

1. current third class medical certificate
2. private or higher pilot certificate
3. at least 25 hours of total time as a UAS rotorcraft pilot including at least 10 hours logged as a UAS pilot with a multi-rotor UAS and a minimum of 5 hours as a UAS pilot operating the same make and model of UAS to be used for Skyview missions.
4. the PIC must accomplish 3 take-offs and landings in the preceding 90 days for currency purposes.
5. The PIC must accomplish 3 return to home emergency procedures in the preceding 30 days for currency purposes.

Skyview employs a chief pilot, L. Felipe Marrou, who has logged over 150 hours operating UAS with over 125 hours in the Phantom II. The chief pilot is responsible for oversight of all PICs, determining if they are qualified and current and conducting periodic training for the PICs to assure proficiency in emergency procedure and Skyview company operating procedures.

Skyview employs one other qualified PIC, Atilano L Nunez who currently has 25 hours in the Phantom II.

OPERATING PARAMETERS

While the Skyview Operations Manual provides the details for operational policies and procedures, following is a summary to assist the FAA in determining that these policies and procedures ensure an equivalent or higher level of safety to those operations conducted under current FAA regulations:

1. The UAS will weigh less than 4 pounds.
2. All flights will be conducted within VLOS to the PIC and/or VO, which shall constitute the minimum crew for any flight.
3. Maximum flight time on one fully charged battery will be the lesser of 30 minutes or 30% battery life remaining, whichever should first occur.
4. Standard flights will be at or below 400' AGL in day time VFR conditions. Special flights over 400' AGL will require the use of additional VOs and coordination with local ATC.
5. Flights will be at a minimum distance of 100' from non-participating persons who are located behind a secure area. All participating personnel will be briefed on the UAS operations and have signed a consent to be participating in the secure operating area. At any location where UAS operations are overhead of participating personnel, safety equipment including hard hats and eye protection shall be utilized.
6. All PICs must meet the minimum pilot qualifications as set forth by Skyview to include a private pilot certificate, third class medical certificate, at least 25 hours of total time as a UAS rotorcraft pilot including at least 10 hours logged as a UAS pilot

with a multi-rotor UAS and a minimum of 5 hours as a UAS pilot operating the same make and model of UAS to be used for Skyview missions, and 3 take-offs and landings in the preceding 90 days and 3 return to home emergency procedures within the preceding 30 days for currency purposes.

7. Operations will only take place in an area that has been cleared and secured in accordance with the Skyview Operations Manual.
8. All PICs will strictly adhere to the check list for each and every flight including briefings, permissions, notifications, preflight actions, flight conditions and emergency procedures in the event of lost communications, intrusion into the secured area by non-participating persons, or other hazards.
9. All required permissions, consents ad permits will be obtained in advance of each and every flight.
10. Skyview will file the proper notifications with all local authorities, including filing NOTAMs where applicable.

PUBLIC INTEREST

National policy established by Congress favors integration of UAS into the NAS in controlled and safe environments as outlined in this petition. Granting the Skyview petition will offer the FAA an opportunity to further their knowledge base for conducting commercial UAS operations in order to implement future rules for widespread use of UAS in the NAS.

Specifically, Skyview is proposing to provide a safe and economical solution to Commercial clients, construction and real estate companies, TV and Film Production companies etc. for videography services to be used as marketing tools, educational tools, sales tools, etc.

CONCLUSION

As set forth above Skyview Films, LLC seeks an exemption from the requirements of 14 CFR §§ 61.113(a) and (b), 91.7(a), 91.119(b) and (c), 91.121, 91.151(a), 91.405(a) and (b), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b) to operate a UAS over certain areas throughout the United States. By granting this petition, the FAA will be fulfilling the

Congressional mandate to integrate UAS into the NAS and advancing the interest of the public by permitting safe and economical use of UAS in the NAS.

Skyview Films

UAS AERIAL VIDEO
FLIGHT OPERATIONS MANUAL

Skiview Films, LLC.

5310 Tyler Street
Hollywood, FL 33021
(786) 306-6580 • (786) 344-3247

Table of Contents

Revision Control Page

Revision#	Date	Initials

1. Introduction

A. Purpose

This manual has been developed by "Skyview Films LLC.", hereafter referred to as "Skyview", in conjunction with an application for a Certificate of Waiver of Authorization of the provisions Exemption Request Section 333 of the FAA Reform Act of the Federal Aviation Regulations from 14 CFR §§ 61.113(a) and (b), 91.7(a), 91.119(b) and (c), 91.121, 91.151(a), 91.405(a) and (b), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b). for operations of UAS in the NAS.

B. Pilot/Operator Organization

Felipe Marrou – Chief Pilot
Atilano Nunez - Manager
Skyview Films, LLC.
5310 Tyler Street
Hollywood. Florida, 33021
Phone: Felipe (786) 306-6580 • Atilano (786) 344-3247

C. Persons Authorized

This waiver applies only to those persons, vehicles and structures directly involved in the performance of the actual video. The certificate holder shall ensure that no persons are allowed within 500 feet of the flight zone except those consenting to be involved and those necessary for the video production. This provision may be modified if the level of safety can be achieved and the Administrator has approved. For example, an equivalent level of safety may be determined by an evaluation of the video production area to note terrain features, obstructions, buildings, etc. Such barriers may protect nonparticipating persons (observers, the public, news media, etc.) from debris in the event of an accident.

D. Area of Operations

Skyview's approved area of operations will be the United States of America.

E. Plan of Activities

At least three (3) days prior to any scheduled video, Skyview will submit a written plan of activities to the local FSDO having jurisdiction over that area. The plan of activities should include the following:

1. Dates and times for all flights.
2. Name and phone number of person responsible for the video production event.

3. Name and phone number of person responsible for aircraft (PIC).
4. Make, model, and serial or N-number of aircraft to be used and type of airworthiness certificate, including category if applicable.
5. Name and certificate number of pilots involved in the video production event.
6. A statement that the waiver holder has obtained permission from property owners and/or local officials to conduct the filming production event. The list of those who gave permission must be made available to the inspector upon request from the waiver holder.
7. Signature of waiver holder or representative.
8. A description of the flight activity including maps or diagrams of any area, city, town, county, and/or State over which filming will be conducted and the minimum altitudes essential to accomplish the operations.

   The three (3) day notification requirement may be waived; however, the operator should contact the FSDO as soon as possible with this request and be prepared to explain in detail why the three (3) day notification is not practical. An example of such a mission would be to video a phase of construction not easily scheduled due to weather constraints.

F. Permission to Operate

Before any flight operations is conducted at or below 400 feet AGL under the provisions of the certificate of waiver and this manual, the operator will obtain permission to conduct these operations from property owners and local officials as necessary or appropriate. Persons from whom permission may be required are listed below:

(1) Property owners
(2) Law enforcement officials
(3) Fire department officials
(4) Local, State and Federal government officials
(5) Air traffic control

The Skyview personnel obtaining such permission will do so in writing whenever practical; however, verbal permission is acceptable otherwise. A standard permission form is provided in Appendix A and may be used when obtaining written permission. Skyview personnel will assure a sufficient number of those forms are available at the job site. Written permission forms will be maintained at the job site until flight operations are completed, and then turned into the chief pilot to be kept on file for a minimum of six (6) months. These forms will be

made available for inspection by the FAA or other official personnel upon request.

Operations may be permitted above 400' AGL under extremely limited circumstances. Any operation above 400'AGL shall be conducted for the shortest duration possible to accomplish the task and shall be completed at the lowest altitude to accomplish the task. Specific examples of tasks requiring operation above 400' AGL would be videography of high rise construction activities, inspection of structures in excess of 400', and similar such tasks.

For operations above 400' AGL all effort shall be made to remain as close to the obstacle being filed as safely possible in order to avoid any possible conflict with other air traffic in the surrounding area.

G. Security

Prior to any flight operation, the operator will coordinate with appropriate production personnel to devise a plan of securing the area(s) of operation from all unauthorized persons and vehicles. Areas of special emphasis shall include:

a) Local weather conditions
b) Local airspace and any flight restrictions
c) Location of persons and property on the ground
d) Location of any ground obstacles
e) Assessment of the operating area to ensure that the operations will pose no undue hazard to other aircraft, people or property in the event of loss of control.

If the operations take place I an area or at an altitude where other air traffic could pose a hazard, the local ATC shall be notified as to the location of the operations and additional VOs will be used to warn the PIC and ATC if aircraft are approaching the area of operations.

Provisions will be made to immediately discontinue operations should the area(s) become unsecured or for any other reason in the interest of safety. A Preflight Check List detailing procedures is attached as Appendix B.2.

H. Briefing of Pilot/Production Personnel

Prior to the start of any operation under the provisions of this manual, the pilot in command shall brief all participating personnel. The briefing will include: all procedures, the risks involved, emergency procedures, and safeguards to be followed during the filming production event. Personnel will also be briefed on additional mission provisions that may be issued by the FAA Representatives, local law enforcement personnel, the chief pilot or other individual that has geographic responsibility for the operational area, including the location of boundaries or time limits. The briefing shall specifically include:

- Authorization for video certificate of waiver and the attached special provisions
- Procedures contained in this Operations manual
- Plan of activities
- Radio Communications
- Take-off procedures
- Aviation activities to be conducted during the filming production event
- Approach and landing procedures
- Recall procedures
- Emergency procedures
- Risks to participating personnel
- How to control non-participating persons

I. Certification/Airworthiness

All Skyview aircraft used in operations requiring a waiver of Section 333 of the FAA Reform Act of the Federal Aviation Regulations from 14 CFR §§ 61.113(a) and (b), 91.7(a), 91.119(b) and (c), 91.121, 91.151(a), 91.405(a) and (b), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b). for the purpose of video will be properly certified and hold airworthiness certificates if applicable. Each aircraft will have a flight log containing upcoming scheduled maintenance and inspections and the dates or times they must be performed. A section for discrepancies is also found in the flight log. The pilot in command will assure the aircraft to be flown is in airworthy condition and all required inspections and maintenance have been completed before each flight.

J. Pilot Personnel/Minimum Requirements

The chief pilot and operator shall establish and specify the minimum pilot requirements. Minimum requirements shall meet or exceed the following:

(1) A current U.S. Private pilot
(2) A current third class FAA medical certificate
(3) At least 25 hours of total time as a UAS rotorcraft pilot including
    a. At least 10 hours logged as a UAS pilot with a multi-rotor UAS
    b. 5 hours as a UAS pilot operating the same make and model to be used under the exemption issued by the FAA
    c. At least 3 take offs and landings in the preceding 90 days (for currency purposes)
    d. At least 3 return to home emergency procedures within the past 30 days (for currency purposes)

K. Communications

Prior to the start of any operation covered by this manual, the pilot in command will formulate a plan to provide communications capability to all participants during the actual operation and filming. Oral, visual and/or radio

communications may be used as long as they are effective and capable of keeping the participants continuously appraised of the current status of the operation.

L. Accident Notification

Should an accident or incident requiring notification of the NTSB occur, the notification requirements of FAR Part 830 would apply.

M. Recall/Stop Procedures

Recall or Stop Procedures shall be used under the following conditions:

1. Lost sight of UAS – Perform Return Home/Recall Procedure
2. UAS out of control – Perform Return Home/Recall Procedure
3. UAS Battery low – Return UAS to LZ immediately
4. Stop and IMMEDIATELY land UAS at nearest safe ground location if:
    a. manned or other unmanned aircraft is in the vicinity of flight zone
    b. unauthorized persons or equipment enter the flight zone
    c. hazardous weather conditions develop
    d. bird flock enters the flight zone
    e. traffic obstruction occurs
    f. PIC becomes distracted believes safety is compromised for any reason

N. Special Provisions

The controls, procedures, and conditions set forth in the Skyview operations manual are the primary assurance that persons on the surface will not be jeopardized.

The aircraft and pilots used under this authorization and/or waiver will only be those specified in the Skyview operations manual (“Appendix A.1”) or associated plan of activities. Each pilot’s name and certificate number shall appear on each daily plan of activity. All civil aircraft and pilot(s) participating in the activity shall be available for FAA inspection before the scheduled event.

Each pilot-in-command conducting operations authorized under this certificate understands the conditions of issuance of Section 333 of the FAA Reform Act of the Federal Aviation Regulations from 14 CFR §§ 61.113(a) and (b), 91.7(a), 91.119(b) and (c), 91.121, 91.151(a), 91.405(a) and (b), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b).

UAS takeoff and landing areas will be protected in a manner that will prevent unauthorized persons from entering the takeoff and landing area.

Skyview will ensure that the participating persons involved in the operations are thoroughly briefed on special procedures, communication, emergency

procedures, and on the provisions of the authorization and/or waiver before beginning the activities. No person may participate in any event unless that person has received a briefing on the provisions of the waiver.

2. Company Organization

A. Chief Pilot

Duties and Responsibilities:

- Final authority in the formulation of policy and procedures concerning this manual.
- Acts as liaison between Skyview and the FAA on matter concerning this manual.
- Assures that each approved pilot is issued a copy of this manual and obtains a signed statement from each that they have read and understand its contents.
- Maintains a current copy of this manual and all required documents at the main base of operations for Skyview.
- Responsible for assuring that all revisions to this manual are distributed and processed properly.
- Must approve or disapprove each proposed job or operation performed by Skyview under the provisions of this manual.
- Assumes the responsibilities of pilot in command when acting as such.
- Verifies minimum flight times, proper certification and currency of each PIC.
- Conducts periodic training of each PIC to assure proficiency and currency
- The chief pilot may delegate functions to other personnel but retains responsibility.

B. Pilot in Command

Duties and Responsibilities:

- Assures that aircraft to be flown is in airworthy condition and that all inspections and required maintenance have been performed as per appropriate FAR's.
- Acquires permission from the chief pilot before any operation under the provisions of this manual.
- Is knowledgeable of the contents of this manual and abides by the procedures, policies and conditions contained herein.
- Coordinates with other personnel to formulate plans, routes, locations, etc. with safety of all persons involved in the primary concern.
- Maintains their copy of this manual in updated condition and keep it on site at any job or operation requiring the waiver.
- Maintains currency and proficiency in the operation of the UAS.
- Complies with all applicable FARs and company policies and procedures.

- Knows the location of the UAS at all times.
- Knows the altitude, attitude and direction of flight of the UAS at all times.
- Observes the airspace for other traffic or other hazards.
- Determines that the UAS does not endanger the life or property of another.
- The pilot in command may delegate functions to other personnel, but retains responsibility.

Appendix A .1

List of Approved Pilots

Chief Pilot

Name: Felipe Marrou

Certificate Number : 3371879

Grade: Private

Medical Class/Date: Third 06-2011

Contact Number: (786) 306-6580

Pilots

Name: Atilano Nunez

Certificate Number: 3186026

Grade: Private

Medical Class/Date: Third 07-2011

Contact Number: (786) 344-3247

Appendix A .2

List of Approved Aircraft

Make and Model	Registration Number
1. DJI Phantom 2 Quadcopter	N735SF
2. DJI Phantom 2 Quadcopter	N736SF

Appendix A .3

Skyview Films, Inc.

Permission Acquisition Form

In signing this form, I am giving the pilots of Skyview Films, Inc. permission to operate their aircraft at the below mentioned location for the purpose of aerial video production. I certify that I am the property owner and/or that I have the authority to grant such permission.

Name: _____

Title: _____

Basis of Authority to Grant Permission

Location: _____

_____

Dates of Operation: _____

Signature: _____

Date: _____

Skyview Representative Receiving Permission

Signature: _____

Appendix A .4

Revision Letter

Rev#	Section	Page	Action	Remarks	Initials

R • Remove and Replace D • Delete and Destroy N • Insert New Page

Manual Serial# _____Issued to: _____

Revised by: _____ Date: _____

This form must be returned to the Chief Pilot no later than _____

Appendix B .1

(See attached Certification of Waiver)

Appendix B.2

SKYVIEW PHANTOM II CHECK LIST

Safety for people, structures and equipment on the ground and for manned aircraft in flight are the primary considerations for UAS aerial photography and videography operations. Proper pre-flight preparation is essential prior to all UAS flight operations.

PREFLIGHT

FLIGHT AREA PROCEDURES:

1. Obtain local weather station data and weather briefing

2. Identify airspace including any flight restrictions therein.

3. Check Area for Obstacles

   - Note location of public and private use airports and heliports and medical heliports and helipads

   - Inspect flight zone for utility poles, transmission and guy wires, trees and

   Other vertical obstacles to flight

   - Inspect traffic patterns and flow of adjacent roadways and parking areas and ensure traffic flow will not be impacted, nor drivers distracted

   - Inspect flight zone for suitability of adjacent public viewing area protected from flight zone

   - Locate and define take-off and landing zone (LZ)

4. Assure proper notifications have been completed

   - Written permission from private property owner

   - ATC notified for issuance of NOTAMs as applicable

   - Post warning signs at public access points

5. PIC briefs VO

   - Review flight zone

   - Review Emergency Procedures

   - Review Mission Specific Information

   - Assure all operating documents are located at on site base station

6. Assure that all flight crew and ground personnel in operational area are briefed before starting flight operations.

AIRCRAFT PROCEDURES:

1. Airframe: Look for Cracks, loose screws & loose cable connections.
2. Props: Check condition look for cracks, chips or other deformities. Replace if needed.
3. Gimbal: Check properly attached.
4. Camera: Check MSD, connection to gimbal and screws to gimbal. Check Battery is fully charged
5. RC (Radio Controller): Ensure Battery is Fully Charged.
6. FPV Radio TV Monitor: Battery fully charged/check connections
7. ***Power Remote Control and wait 20 seconds for signal to be established.***
8. ***Power UAS ON and wait for GPS Lock Green Light.***
9. RC on (Green Lights) – CHECK
10. Antenna set - CHECK
11. Place UAS on flat surface - CHECK
12. UAS Battery: On & Full charge – CHECK
13. Gimbal Calibration – CHECK
14. UAS GPS calibration rotation – CHECK
15. UAS GPS lock green lights – CHECK

TAKE OFF

1. Clear area of People and Obstacles
2. Start Motors
3. Lift Off 4 feet AGL hold for 1min and perform control accuracy rotations
   - IMMEDIATELY SHUT DOWN IF CONTROL ACCURACY ROTATIONS FAIL.
4. Proceed to proposed altitude

DURING FLIGHT

1. PIC to keep UAS in sight at all times.
2. Maintain Visual and Radio Communication with VO and ground personnel.
3. Monitor UAS Battery – Continuously to NO LESS THAN 30%
4. Monitor RC Battery – Continuously
5. Monitor Altitude not to Exceed mission altitude AGL
6. Monitor Distance Do Not Exceed 1000’ From Pilot
7. Remain alert for bird activity, manned flight activity, non-participating people and vehicle activity
8. Maintain “sterile cockpit” procedures for duration of flight

LANDING

1. Fly UAS back to LZ before 30% battery has been used.
2. LZ Area Clear of Obstacles - Check
3. Land & power off UAS
4. Power off RC

EMERGENCY PROCEDURES

1. Lost sight of UAS – Perform Return Home Procedure

2. UAS out of control – Perform Return Home Procedure

3. UAS Battery low – Return UAS to LZ immediately

4. IMMEDIATELY land UAS at nearest safe ground location if:

    - manned or other unmanned aircraft is in the vicinity of flight zone

    - unauthorized persons or equipment enter the flight zone

    - hazardous weather conditions develop

    - bird flock enters the flight zone

    - traffic obstruction occurs

    - PIC becomes distracted believes safety is compromised for any reason

PHANTOM 2 User Manual V1.2

For PHANTOM 2 Flight Controller Firmware version V3.08

& PHANTOM 2 Assistant version V3.4

& PHANTOM RC Assistant version V1.1

2014.10

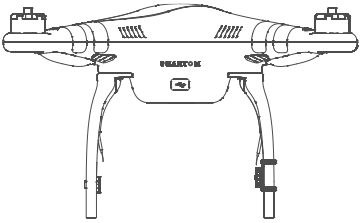
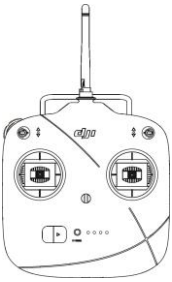
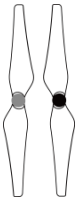
Congratulations on purchasing your new DJI product. Please thoroughly read the entire contents of this manual to fully use and understand the product.

It is advised that you regularly check the PHANTOM 2's product page at **www.dji.com** which is updated on a regular basis. This will provide services such as product information, technical updates and manual corrections. Due to any unforeseen changes or product upgrades, the information contained within this manual is subject to change without notice.

If you have any questions or concerns regarding your product, please contact your dealer or DJI Customer Service.

Content

In the Box

PHANTOM 2	Remote Control-2.4GHz	Propeller Pair
		
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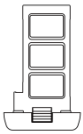		
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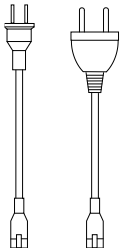
		
Micro-USB Cable	Screws	Accessories Box
		

Legend

Forbidden(Important) Caution Tip Reference

1. PHANTOM 2 Aircraft

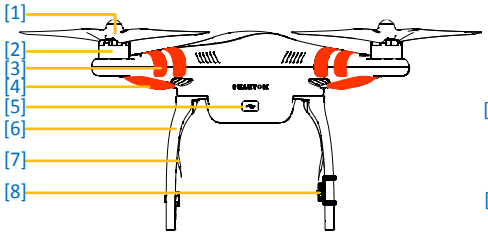


Figure 1-1

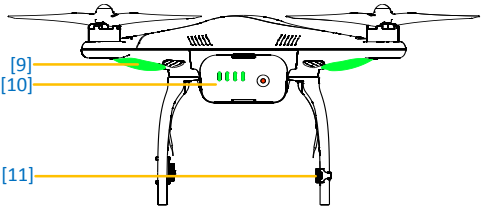


Figure 1-2

[1]Propeller [2]Motor [3]Front Side [4]Front LEDs [5]Micro-USB Port [6]Landing Gear [7]Receiver Antenna [8]CAN-Bus Connector [9]LED Flight Indicators [10]DJI Intelligent Battery [11]Compass

1.1 Built-in Flight Control System Instructions

The built-in flight control system is used to control the entire aircraft's functions in flight such as Pitch (forwards and backwards), Roll (left and right), Elevator (up and down) and Yaw (turn left or right). The flight controller contains the MC (Main Controller), IMU, GPS, compass, receiver.

The IMU (Inertial Measurement Unit) has a built-in inertial sensor and a barometric altimeter that measures both attitude and altitude. The compass reads geomagnetic information which assists the GPS (Global Position System) to accurately calculate the aircrafts position and height in order to lock the aircraft in a stable hover. The receiver is used to communicate with the remote control and the MC acts as the brains of the complete flight control system connecting and controlling all the modules together.

The PHANTOM 2 can be configured in the Assistant, by choosing Naza-M mode or Phantom 2 mode. This manual is for Phantom 2 mode. Please refer to the Naza-M V2 Quick Start Manual for more information.

1.2 Connections with Other DJI Products

PHANTOM 2 is compatible with other DJI products, including ZENMUSE H3-2D and H3-3D gimbal , iOSD mini , iOSD Mark II. Below are connections for these products and wireless video transmission module.

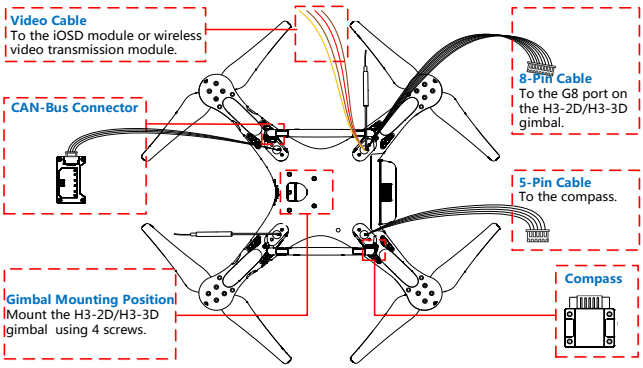


Figure 1-3

Important Notes of Using with Other DJI Products

(1) The video cable can provide power for the wireless video transmission module with a battery voltage (11.1V~12.6V) and a maximum current 2A.

(2) Make sure the working current of the wireless video transmission module you connect can work with an operational voltage between 11.1V~12.6V and the total working current of the iOSD and wireless video transmission module is under 2A, as an overcurrent will damage the central board's components. If the total current exceeds 2A, please be sure to provide power supplied from a separate power source for the wireless video transmission module.

(3) PHANTOM 2 uses a 2.4GHz RC system. To avoid communication interference, it's not recommended to use other 2.4GHz devices (including 2.4G Wi-Fi or 2.4G wireless video transmission module) except the 2.4G Bluetooth and 2.4G Datalink.

(4) Be sure to keep the wireless video transmission module and other communicating devices away from the compass during installation and connection to avoid interference.

(5) To improve the compatibility with ZENMUSE gimbals, the latest factory deliveries of PHANTOM 2 has updated to the Version 2 shown below. H3-2D/H3-3D gimbal can be directly installed for the Version 2 while for Version 1, a H3-3D adapter kit (coming soon) is required to install the H3-3D gimbal.

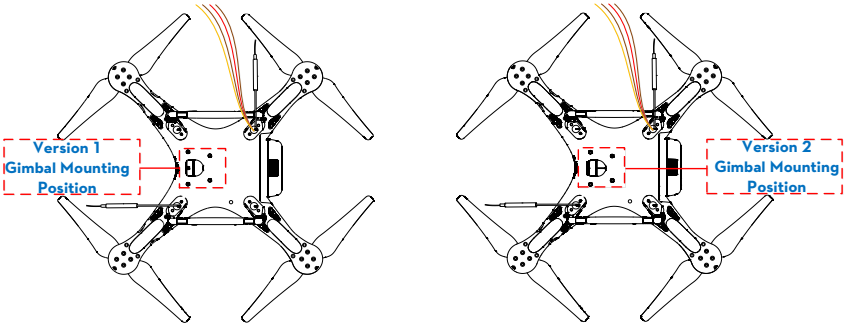


Figure 1-4

(6) When using the H3-3D gimbal, please connect the 8-Pin cable of PHANTOM 2 to the G8 port of H3-3D shown below.

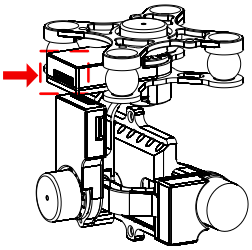


Figure 1-5

Connections with Other DJI Products

(1) Connecting the H3-2D and H3-3D gimbal and wireless video transmission module, the figure below uses H3-2D as an example.

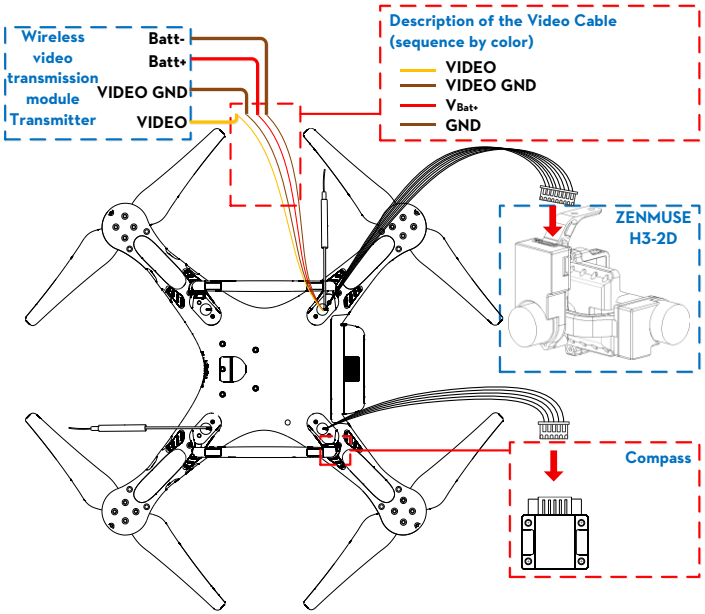


Figure 1-6

(2) Connecting the H3-2D and H3-3D gimbal, iOSD mini and wireless video transmission module, the figure below uses H3-2D as an example.

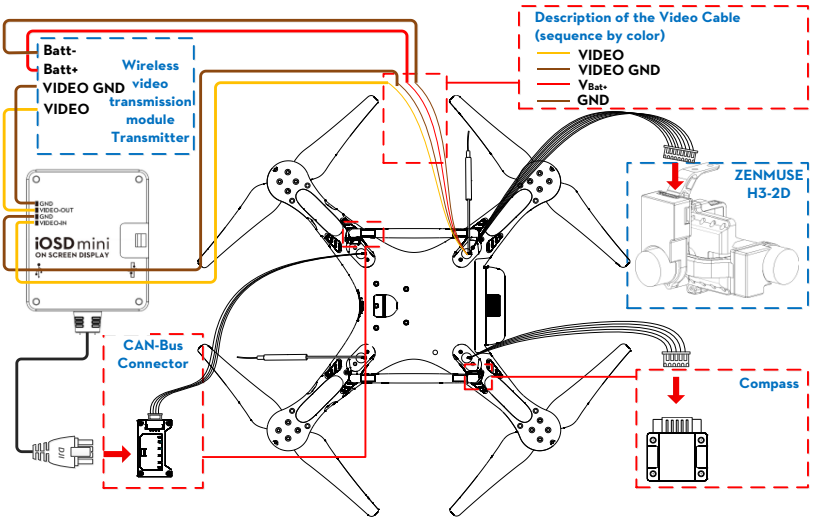


Figure 1-7

(3) Connecting the H3-2D and H3-3D gimbal, iOSD mini and DJI specified wireless video transmission module AVL58, the figure below uses H3-2D as an example.

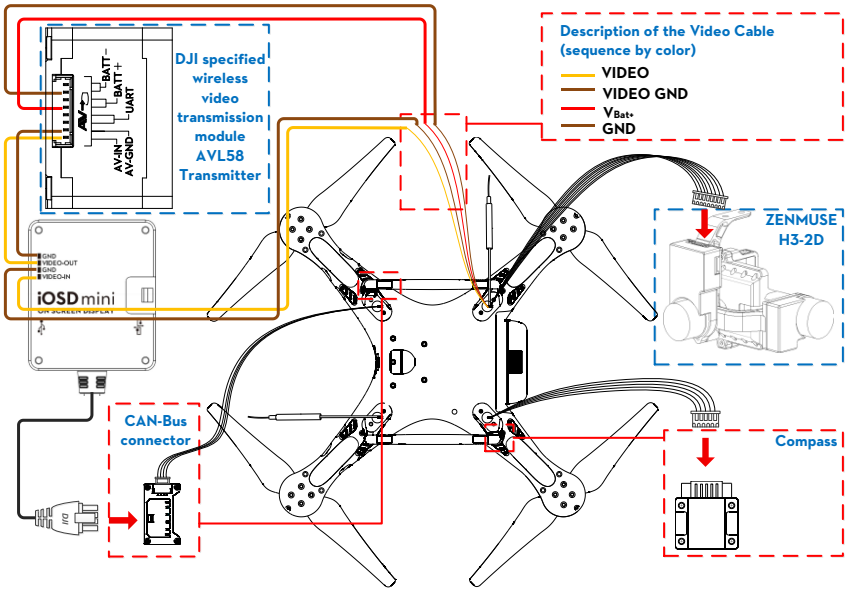


Figure 1-8

We recommend connecting the V_{Bat+} port of the video cable to the two BATT+ ports of the AVL58 simultaneously. The same is true of the GND port of the video cable and two BATT- ports.

(4) Connecting the H3-2D and H3-3D gimbal, iOSD Mark II and wireless video transmission module, the figure below uses H3-2D as an example.

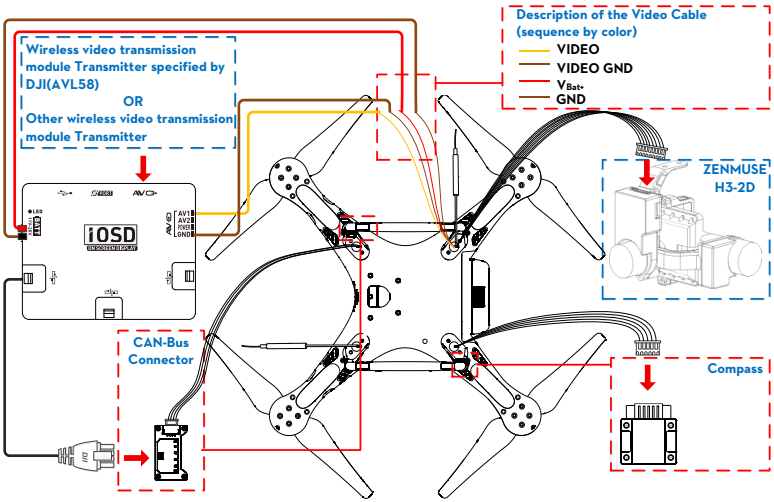
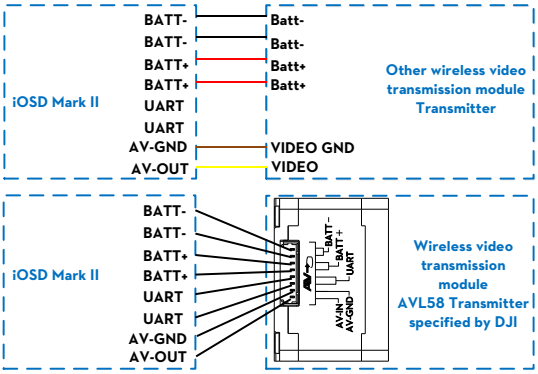


Figure 1-9

The diagram below illustrates the conneciton between the iOSD Mark II and the wireless video transmission module.



Use the 8-Pin cable in the iOSD Mark II package when connecting to the DJI specified wireless video transmission module AVL58.

(5) Using the iPad Ground Station

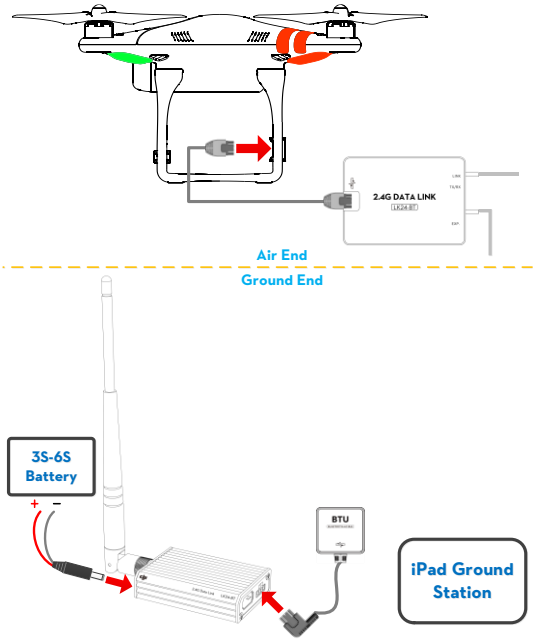


Figure 1-10

Connect the Air End of 2.4G Bluetooth Datalink to a spared CAN-Bus port of iOSD if an iOSD is used.

(6) Using the PC Ground Station

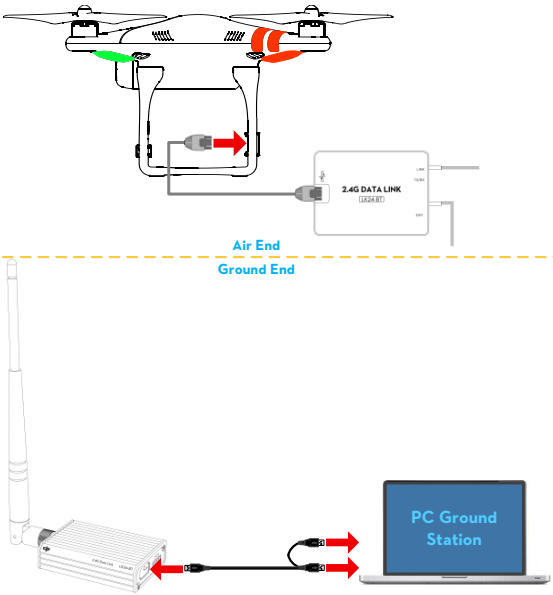
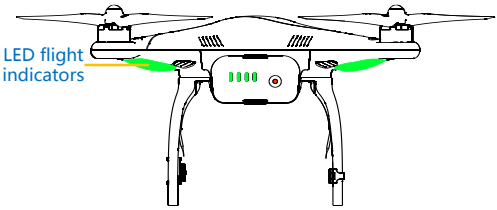


Figure 1-11

1.3 LED Flight Indicators Description

1. **LED flight indicators** are used to show the aircraft's current status. Once powered on, the indicators will light up.

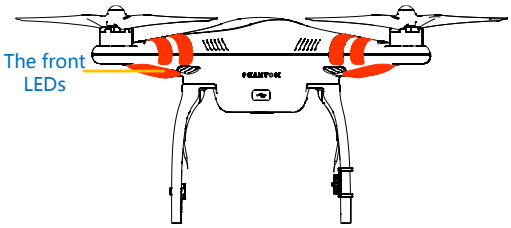


Aircraft in Normal status	Descriptions
	Power On Self-Test
	Warming Up & Aircraft cannot take off during warming up
	Ready to Fly
	Ready to Fly (non-GPS)
Aircraft in abnormal status	**Warnings and errors**
	Remote Control Signal Lost
	1st Level Low Battery Capacity Warning
	2nd Level Low Battery Capacity Warning
	Not Stationary or Sensor Bias is too big
	Errors & Aircraft cannot fly.
	Compass data abnormal because of ferro-magnetic interference or the compass needs calibration.

⚠ (1) The LED indicators diagram above are for Phantom 2 mode. In Naza-M mode, LED indicators will work according to the Naza-M flight control system.

(2) Connect to the PHANTOM 2 Assistant for detailed information about warnings and errors.

2. The front LEDs are for indicating where the nose of the aircraft is. They light up solid red only after the motors have spooled up.



1.4 Notes for PHANTOM 2 using with other DJI products

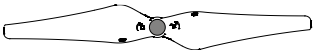
Before using PHANTOM 2 with other DJI products, users should connecting the products correctly and upgrade the firmware as requirements below .

Items to upgrade	Firmware versions required	Assistant for upgrading	Assistant version
P330CB (built-in central board)	V1.0.1.19 or above	PHANTOM 2	V1.08 or above
Zenmuse H3-2D	CMU V1.0 , IMU V1.6 or above	PHANTOM 2	V1.08 or above
iOSD Mark II	V3.01 or above	iOSD	V4.0 or above
iOSD mini	V1.06 or above	iOSD	V4.0 or above

*The iOSD Assistant is applied to both iOSD Mark II and iOSD mini.

2 Propellers

PHANTOM 2 uses the original 9-inch propellers which are classified by the color of each central nut. Damaged propellers should be replaced by purchasing new ones if necessary.

Propellers	Grey Nut (9450)	Black Nut (9450 R)
Diagram		
Assembly Location	Attach to the motor thread that **does not have a black dot**.	Attach to the motor thread that **has a black dot**.
Fastening/Un-fastening Instructions	 Lock: Tighten the propeller in this direction. Unlock: Remove the propeller in this direction.	

2.1 Assembly

1. (Figure 2-1) Remove the four warning cards from the motors after you've read them.
2. (Figure 2-2) Prepare the two grey nut propellers and two black nut propellers. Make sure to match the black nut propellers with the correctly marked black dot motors. Tighten the propellers according to the fastening instructions.

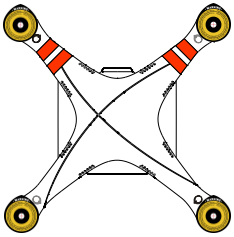


Figure 2-1

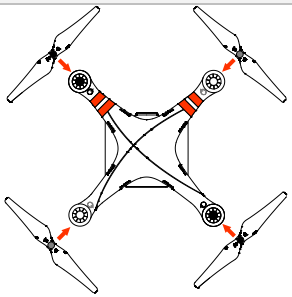


Figure 2-2

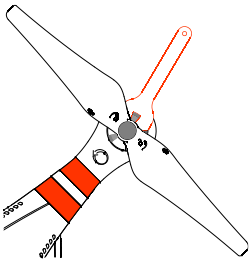


Figure2-3

2.2 Disassembly

(Figure 2-3) Keep the motor deadlocked in place with the assistant wrench (or one hand) and remove the propeller according to the un-fastening instructions.

2.3 Notes

1. Propellers are self tightening during flight. DO NOT use any thread locker on the threads.
2. Make sure to match the propeller nut colors with the corresponding motors.
3. It is advised to wear protective gloves during propeller assembly and removal.
4. Check that the propellers and motors are installed correctly and firmly before every flight.
5. Check that all propellers are in good condition before flight. DO NOT use any ageing, chipped, or broken propellers.
6. To avoid injury, STAND CLEAR of and DO NOT touch the propellers or motors when they are spinning.
7. ONLY use original DJI propellers for a better and safer flight experience.

3 Remote Control

The PHANTOM 2 remote control can be configured in the PHANTOM RC Assistant. The sticks mode is Mode 2 on delivery.

⚠	For upgraded remote control (models: NDJ6 or NRC900), select “Upgrade Version” in Phantom Assistant. For basic remote control (models: DJ6 or RC900), select “Basic Version” in Phantom Assistant.

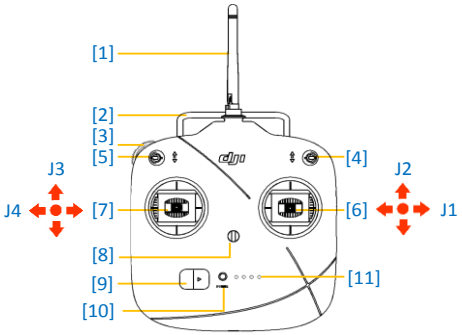


Figure 3-1

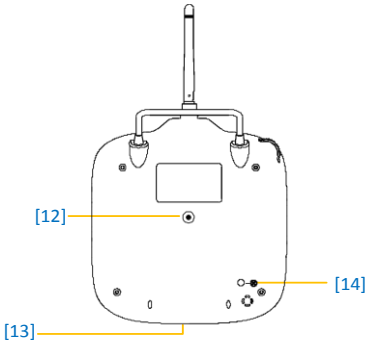


Figure 3-2

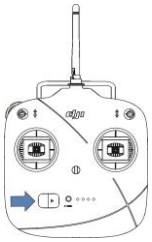
[1]Antenna [2]Carrying Handle [3]Left Dial [4]3-Position Switch S1 [5]3-Position Switch S2 [6]Joystick1(J1;J2) [7]Joystick2(J3;J4) [8]Neck Strap Attachment [9]Power Switch [10]Power Indicator

[11]Battery Level Indicators LED1/LED2/LED3/LED4 (from left to right) [12]Trainer Port

[13]Battery Charge & RC Assistant Port (micro-USB port) [14] Potentiometer

3.1 Power on the Remote Control

1. Set the S1 and S2 switches to the upper most position and ensure both joysticks are at the mid-point position. Then toggle on the power switch.
2. Push the power switch to the right to power on the remote control. If the power LED indicator is solid on, the remote control is functioning normally. The battery level indicators display the current battery level.

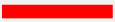
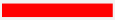


⚠

1. Please make sure the battery level of remote control is enough. If the low voltage warning alert sounds (refer to <Remote Control Power LED Indicator Status>), please recharge the battery as soon as possible.
2. Charge the remote control’s battery by using the included micro-USB cable. Using the incorrect type of charging cable may cause damage.
3. Turn off the remote control before charging. The power LED indicator will display solid red when charging is in progress. The LED indicators will display solid green when the battery is fully charged.

3.2 Remote Control LED Indicator Status

3.2.1 Remote Control Power LED Indicator Status

Power LED Indicator	Sound	Remote Control Status
	None	Functioning normally.
	None	Charging(remote control is powered off)
	None	Remote control joysticks calibration error, need to be re-calibrate.
	BB---BB---BB	Low voltage (from 3.5V-3.53V), recharge the remote control.
	B-B-B.....	Critical low voltage (from 3.45V-3.5V). Recharge the remote control immediately.
	B--B--B.....	Alert will sound after 15 minutes of inactivity. It will stop once you start using the remote control.

The remote control will power off automatically when battery voltage drops below 3.45V. Land and recharge the battery as soon as possible when the low voltage alert occurs to avoid loss of control during flight.

3.2.2 Remote Control Battery Level Indicator Status

The battery level indicators will show the current battery level during both the discharging process. The following is a description of the indicators.

 : The LED is solid on

 : The LED will blink regularly

 : The LED is light off

Discharging process				
LED1	LED2	LED3	LED4	Current battery level
				75%~100%
				50%~75%
				25%~50%
				12.5%~25%
				0%~12.5%
				<0%

3.3 Antenna Orientation

The remote control's antenna should point skywards without obstructions for maximum communication range during flight.

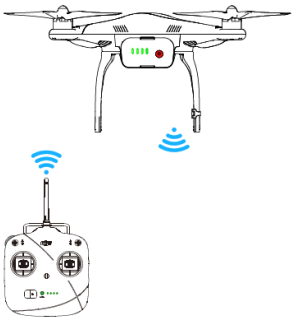


Figure 3-3

3.4 Remote Control Operation

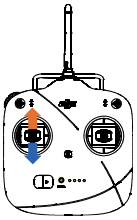
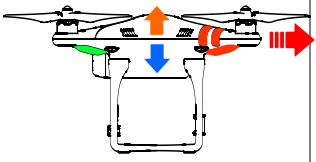
The operations of remote control are based on mode 2 stick configuration.

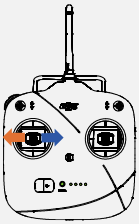
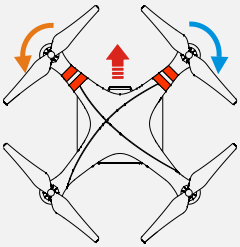
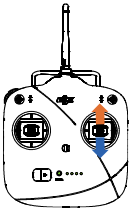
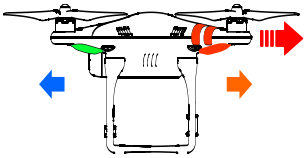
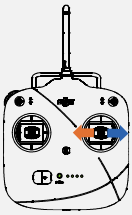
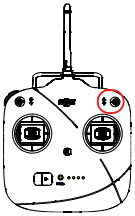
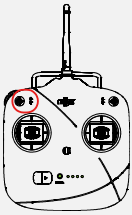
Definitions

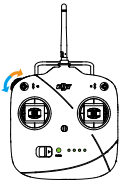
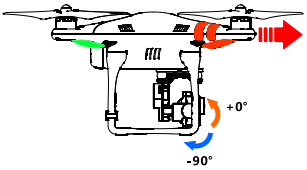
The **`stick neutral'** positions and **`stick released'** mean the control sticks of the remote control are placed at the central position.

To **`move the stick'** means that the stick of remote control is pushed away from the central position.

Slide Lever is used for the pitch control of the H3-2D and H3-3D gimbal.

Remote Control (Mode 2)	**Aircraft** (nose direction)	**Operation details**
		The throttle stick controls aircraft altitude/elevation. Push the stick up and the aircraft will rise. Pull the stick down and the aircraft will descend. The aircraft will automatically hover and hold its altitude if the sticks are centered. Push the throttle stick above the centered (mid-point) position to make the aircraft take off. When flying, we suggest that you push the throttle stick slowly to prevent the aircraft from sudden and unexpected elevation changes.

		The yaw stick controls the aircraft rudder. Push the stick left and the aircraft will rotate counter clock-wise. Push the stick right and the aircraft will rotate clock-wise. If the stick is centered, the aircraft will remain facing the same direction. The yaw stick controls the rotating angular velocity of the aircraft. Pushing the stick further away from center results in a faster aircraft rotation velocity.
		The pitch stick controls the aircraft ' s front & back tilt. Push the stick up and the aircraft will tilt and fly forward. Pull the stick down and the aircraft will tilt and fly backward. The aircraft will keep level and straight if the stick is centered. Pushing or pulling the stick further away from center will result in a larger tilt angle (maximum of is 35°) and faster flight velocity.
		The roll stick controls the aircraft ' s left & right tilt. Push the stick left and the aircraft will tilt and fly left. Push the stick right and the aircraft will tilt and fly right. The aircraft will keep level and straight if the stick is centered. Pushing the stick further away from center will result in a larger tilt angle (maximum of 35°) and faster flight velocity.
	 Position-1 Position-2 Position-3	S1 is for compass calibration. Toggle the S1 switch from position-1 to position-3 and back to position-1 at least 5 times, which will force the aircraft to enter into compass calibration mode. Users can configure position 3(bottom position) of the S1 switch to trigger the Failsafe in the Assistant.
	 OFF Course Lock point Lock Home	S2 is the IOC mode switch. IOC (Intelligent Orientation Control) function can be enabled in the Assistant when in Naza-M mode. Only use the IOC function after you are familiar with flying.

		The left dial controls the pitch of the H3-2D and H3-3D gimbal. The position of left dial determines the pitch angle relative to the horizontal level. Turn the left dial to the right to make the gimbal pitch up. Turn the left dial to the left to make the gimbal pitch down. The gimbal will keep its current position if the dial is static.

(1) For `Ready to Fly´ the aircraft will hover when all sticks are released.

(2) For `Ready to Fly (non-GPS)´ the aircraft will only keep the altitude when all sticks are released.

3.5 Linking the Remote Control & Built-in Receiver

PHANTOM 2 has a built-in receiver, the link button and indicator located on the bottom of the aircraft as illustrated in the Figure 3-4.

The link between the remote control and aircraft is already established for you so you can initially skip this procedure. If you ever replace the remote control, re-establishing the link is required.

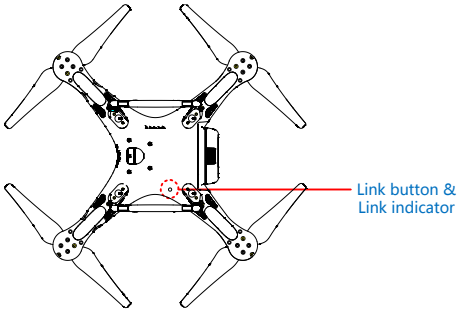


Figure 3-4

Linking procedures

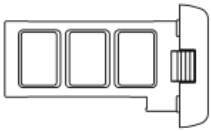
1. Power on the PHANTOM 2.
2. Turn on the remote control and place it 0.5m~1m away from the aircraft.
3. Push the link button with a thin object and hold it until the Link indicator blinks red, then release it.
4. When the Link indicator turns solid green, the link between the remote control and the built-in receiver has been successfully established.

Link Indicator	Status
	The remote control is turned off and there is no 2.4GHz signal around, please turn on the remote control.
	The receiver is ready for linking.
	There is 2.4GHz signal around but the remote control is not linked with the receiver,

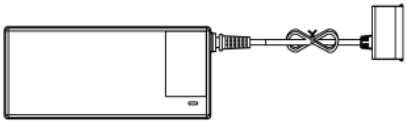
	please carry out the linking procedures.
	The remote control is linked with the receiver successfully.

4 Intelligent Battery

The intelligent battery is specially designed for the PHANTOM 2, with a battery capacity of 5200mAh, voltage of 11.1V and charge-discharge management functionality. The battery should only be charged with the DJI charger.



Intelligent Battery



Charger

DJI Intelligent Battery Functions	
(1) Balance Charging	Automatically balance the voltage of each battery cell during charging.
(2) Capacity Display	Display the current battery level.
(3) Communicating	The main controller communicates with the battery via communication ports for battery voltage, capacity, current and other information.
(4) Overcharging Protection	Charging stops automatically when the battery voltage reaches 12.8V to prevent overcharging damage.
(5) Over Discharging Protection	Discharging stops automatically when the battery voltage reaches 8.4V to prevent over discharging damage.
(6) Short Circuit Protection	Automatically cuts off the power supply when a short circuit is detected.
(7) Sleep Protection	The battery will enter sleep mode after 10 minutes of inactivity to save power. The static current is 10nA in sleep mode when the battery is powered on without connecting to other devices.
(8) Charging Temperature Detection	The battery will charge only when its temperature is within 0℃-55℃. If the battery temperature is out of this range, the battery will stop charging.

(1) Before use, please read and follow the user manual, disclaimer, and the warnings on the battery. Users take full responsibility for all operations and usage.

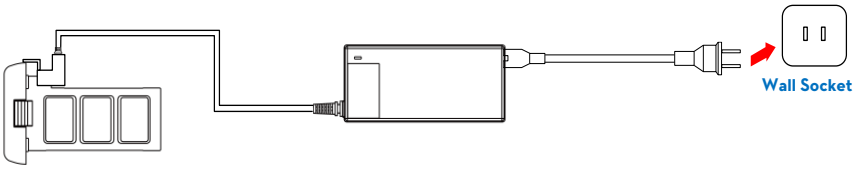
(2) The battery should only be charged with the charger provided by DJI. DJI does not take any responsibility for operation of any charger from a third party.

4.1 Charging Procedures

1. Connect the charger to a wall socket (Use the plug set if necessary).
2. Connect the battery to the charger. If the current capacity of the battery is over 75%, you should power on the battery to begin charging.
3. The Battery Level indicators display current capacity level as the battery charges. Please refer to battery

level indicator description for details.

4. The battery is fully charged when the Battery Level indicator lights are off. Please disconnect the charger and battery when the charging is completed.



4.2 Install the Battery

Push the battery into the battery compartment correctly as the following diagram shows. Make sure to push the battery into the compartment until you hear a `click' sound.

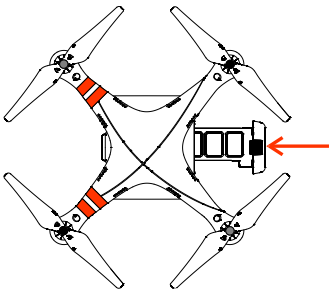


Figure 4-1

An incorrectly inserted battery may cause one of the following to occur: (1) Bad contact. (2) Unavailable battery information. (3) Unsafe for flight. (4) Unable to take off.

4.3 Battery Usage

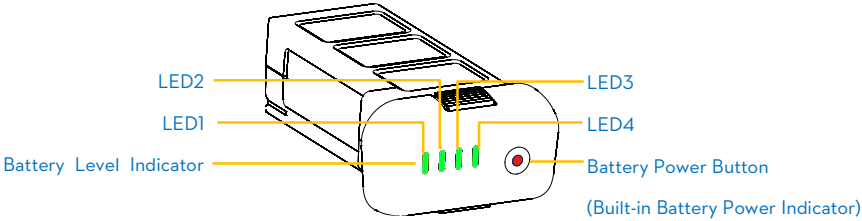


Figure 4-2

(1) Checking the battery level: When the battery is powered off; pressing the battery power button once will indicate the current battery level. Refer to < Battery Level Indicator Description> for details.

(2) Powering on: When the battery is powered off; press the battery power button once and then press and hold for 2 seconds to turn on the intelligent battery.

(3) Powering off: When the battery is powered on; press the battery power button once and then press and hold for 2 seconds to turn off the intelligent battery.

(4) Checking the battery life: When the battery is powered off; press and hold the battery power button for 5 seconds to check the battery life. The battery level indicators will show the life and the battery power indicator will blink for 10 seconds, then all LEDs will light out and the intelligent battery will turn off. Refer to < Battery Level Indicator Description> for details.

More battery information is available in the battery tab of the PHANTOM 2 Assistant.

4.4 Description of the Battery Level Indicator

The battery level indicators will show the current battery level during both the charging and discharging process as well as battery life. The following is a description of the indicators.

 : The LED is solid on

 : The LED will blink regularly

 : The LED is light off

Charging process				
LED1	LED2	LED3	LED4	Current battery level
●	■	■	■	0%~25%
●	●	■	■	25%~50%
●	●	●	■	50%~75%
●	●	●	●	75%~100%
■	■	■	■	Full charged

Discharging process				
LED1	LED2	LED3	LED4	Current 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%

Battery life				
LED1	LED2	LED3	LED4	Current battery life
■	■	■	■	90%~100%

■	■	■	●	80%~90%
■	■	■	■	70%~80%
■	■	●	■	60%~70%
■	■	■	■	50%~60%
■	●	■	■	40%~50%
■	■	■	■	30%~40%
●	■	■	■	20%~30%
■	■	■	■	Less than 20%

4.5 Correct Battery Usage Notes

1. Never plug or unplug the battery into the aircraft when it is powered on.
2. The battery should be charged in an environment that is between 0℃ to 40℃, and be discharged in an environment that is between -20℃ to 50℃. Both charging and discharging should be in an environment where the relative humidity is lower than 80%.
3. It's recommended to charge and discharge the battery thoroughly once every 20 charge/discharge cycles. Users should discharge the battery until there is less than 8% power left or until the battery can no longer be turned on. Users should then fully recharge the battery to maximum capacity. This power cycling procedure will ensure the battery is working at its optimal level.
4. For long term storage please place the battery with only a 40~50% capacity in a strong battery box securely. We recommend discharging and charging the battery completely once every 3 months to keep it in good condition. The capacity should be varied in such a cycle (40%~50%)—0%—100%—(40%~50%).
5. It's suggested you purchase a new battery after you have discharged your current battery over 300 times. Please completely discharge a battery prior to disposal.
6. It's suggested that you purchase a new battery if the current battery is swollen or damaged in any way.
7. Never try to recharge or fly with a battery that is swollen or damaged in any way.
8. Never charge the battery unattended. Always charge the battery on a non-flammable surface such as concrete and never near any flammable materials.
9. Safety is extremely important and users can get more information in the DISCLAIMER.

5 Calibrating the Compass

IMPORTANT: Make sure to perform the Compass Calibration procedures prior to the first flight.

The compass is very sensitive to electromagnetic interference which causes abnormal compass data and leads to poor flight performance or even flight failure. Regular calibration of the compass enables the compass to perform at its optimal level.

5.1 Calibration Warnings

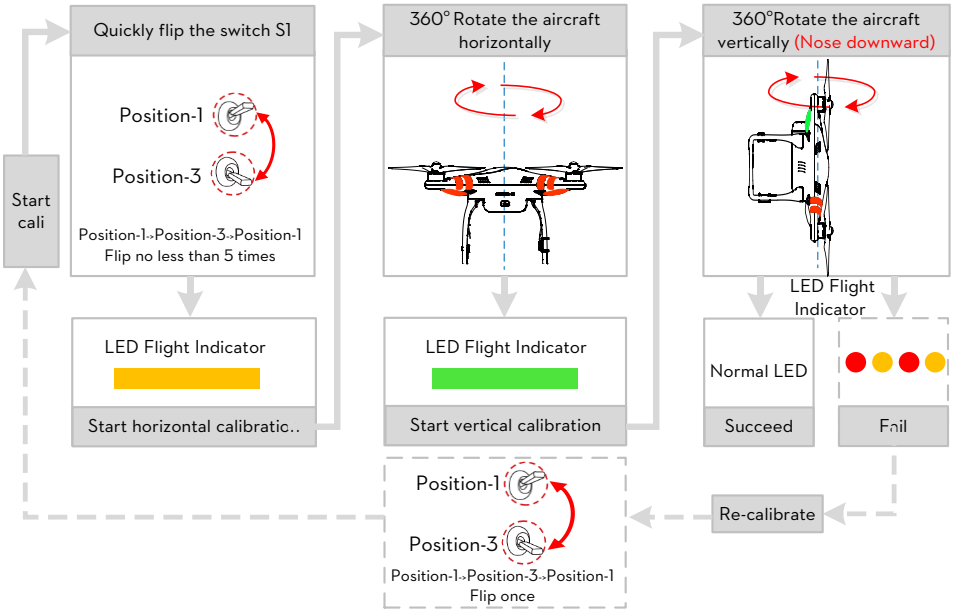
(1) DO NOT calibrate your compass where there is a possibility for the existence of strong magnetic interference such as magnetite, parking structures, and steel reinforcement underground.

(2) DO NOT carry ferromagnetic materials with you during calibration such as keys or cellular phones.

(3) Compass Calibration is very important; otherwise the flight control system will work abnormally.

5.2 Calibration Procedures

Please carry out the calibrating procedures in the flight field before flight. Please watch the quick start video of the PHANTOM 2 for more compass calibration details.



5.3 When Recalibration is required

(1) When Compass Data is abnormal, the LED flight indicator will blink alternating between red and yellow.

(2) Last compass calibration was performed at a completely different flying field/location.

(3) The mechanical structure of the aircraft has changed, i.e. changed mounting position of the compass.

(4) Evident drifting occurs in flight, i.e. the aircraft doesn't fly in straight lines.

6 Flight

6.1 Flying Environment Requirements

(1) Before your first flight, please allow yourself some flight training (Using a flight simulator to practice flying, getting instruction from an experienced person, etc.).

(2) DO NOT fly in bad weather, such as rain or wind (more than moderate breeze) or fog.

(3) The flying field should be open and void of tall buildings or other obstacles; the steel structure within buildings may interfere with the compass.

(4) Keep the aircraft away from obstacles, crowds, power lines, trees, lakes and rivers etc.

(5) Try to avoid interference between the remote control and other wireless equipment (No base stations or cell towers around).

(6) The flight control system will not work properly at the South Pole or North Pole.

(7) Never use the aircraft in a manner that infringes upon or contravenes international or domestic lays and regulations.

6.2 Starting the Motors

A Combination Stick Command (CSC) is used to start the motors. Push the sticks according to one of the options below to start motors. Once the motors have started, release both sticks simultaneously. The same CSC is used to stop the motors.

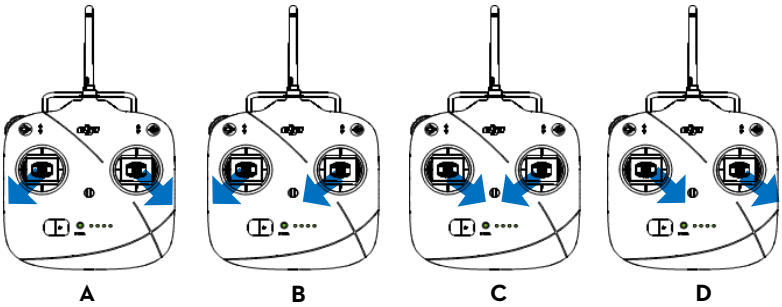


Figure 6-1

6.3 Takeoff/Landing Procedures

1. Start by placing the PHANTOM 2 on the ground with the battery level indicators facing you.
2. Turn on the remote control.
3. Power on the aircraft by turning on the intelligent battery.
4. When LED flight indicator blinks green/yellow, the PHANTOM 2 is entering Ready to Fly/Ready to Fly (non-GPS) mode. Start the motors with the CSC command.
5. Push the throttle stick up slowly to lift the aircraft off the ground. Refer to <Remote Control Operation> for more details.
6. Be sure you are hovering over a level surface. Pull down the throttle stick to descend. The stick will lock into

place and the aircraft will descend steadily.

7. After landing, leave the throttle stick down for 3 to 5 seconds to stop the motors. Return throttle stick to middle position after the motors have stopped.

You SHOULD NOT execute the CSC during normal flight! This will stop the motors and cause the aircraft to descend rapidly and drop without any type of control.

(1) When the LED flight indicator blinks yellow rapidly during flight, the aircraft has entered into Failsafe mode, refer to <Failsafe Function> for details.

(2) A low battery capacity warning is indicated by the LED flight indicator blinking red slowly or rapidly during flight. Refer to the <Low Battery Capacity Warning Function> for details.

(3) Watch the quick start video about flight for more flight information.

(4) Aircraft and battery performance is subject to environmental factors such as air density and temperature. Be very careful when flying 3000 meters (9800 feet) or more above sea level, as battery and aircraft performance may be reduced.

(5) When used with a H3-3D gimbal, a GoPro camera, and the iOSD mini, your Phantom 2 will be very close to its maximum takeoff weight. It is not recommended that you attach the Phantom 2 propeller guards at this weight. Otherwise, the aircraft will be unable to fly normally.

6.4 Failsafe Function

The aircraft will enter Failsafe mode when the connection from the remote control is lost. The flight control system will automatically control the aircraft to return to home and land to reduce injuries or damage. The following situations would make the aircraft fail to receive a signal from the remote control and enter Failsafe mode:

(1) The remote control is powered off.

(2) The remote control is powered on but the S1 is toggled in the position triggering the Failsafe (this must have been configured in the PHANTOM 2 Assistant).

(3) The aircraft has flown out of the effective communication range of the remote control.

(4) There is an obstacle obstructing the signal between the remote control and the aircraft, essentially reducing the distance the signal can travel.

(5) There is interference causing a signal problem with the remote control.

Failsafe works differently depending on the mode the aircraft is in when Failsafe mode is initiated whether it is in the Ready to Fly or Ready to Fly (non-GPS) mode.

Ready to Fly (non-GPS) ---- Automatic landing

The flight control system will try to keep the aircraft level during descent and landing. Note that the aircraft may be drifting during the descent and landing process.

Ready to Fly ---- Automatic go home and land

The flight control system will automatically control the aircraft to fly back to the home point and land.

Home Point

When the aircraft is initializing the Ready to Fly status, the aircraft will record the current GPS coordinates as the home point. It is recommended to lift off only after Ready to Fly status is confirmed for the safety of being able to fly back to home point successfully in case the Failsafe mode is initiated.

Go Home Procedures

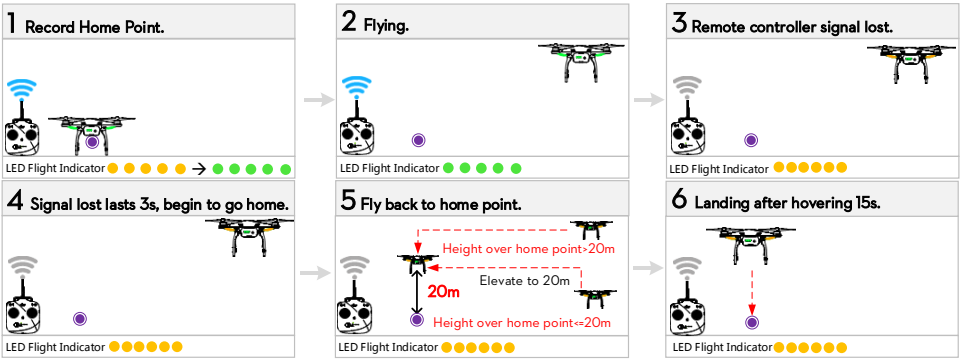


Figure 6-2

(1) In a Failsafe situation, if less than 6 GPS satellites are found for more than 20 seconds, the aircraft will descend automatically.

In Phantom 2 mode, users can set a new home point manually when the aircraft is in "Ready to fly" status as long as a home point has been recorded automatically. Quickly flipping the S2 switch of the remote control from upper most to lower most positions 5 times or more will reset the current aircraft position as a new home point of PHANTOM 2. When successfully reset, you will see a series of rapid green blinks on the LED Flight Indicator. The definition of "home point" is:

(1) The home point is the place PHANTOM 2 returns to when the control signal is lost, which is recorded last time.

(2) The home point is used to calculate the horizontal distance between you and the aircraft, the distance will be displayed as D if using iOSD module.

Regaining Control during Failsafe Procedure

Position of Switch S1	Position-1	Position-2	Position-3 (No triggering the Failsafe)
How to regain control	When the S1 switch is switched to Position-1, toggle the S1 switch to any other position once to regain control. If remote control's signal is recovered, control is returned back to the pilot.	Regain control as soon as signal is recovered.	

6.5 Low Battery Capacity Warning Function

The low battery capacity warning alerts users when the battery is close to depletion during flight. When it appears, users should promptly fly back and land to avoid accidental damage. The PHANTOM 2 has two levels of low battery capacity warning. The first appears when the battery has less than 30% power and the second appears when it has less than 15% power.

(1) When battery power drops below 30% and LED indicator will blink red slowly.

(2) At lower than 15% the LED indicator will blink red rapidly, the PHANTOM 2 will also begin to descend and land automatically. After it has landed, keep the throttle stick at its lowest point or execute CSC.

(3) There is a hidden third low battery threshold in addition to the 1st and 2nd level warnings. This uses 10.65V as its threshold. Both this voltage threshold and the 2nd Level Low Battery Warning will trigger auto-landing. Altitude can be maintained if necessary by pushing up on the throttle stick.

(1) Remember to fly your PHANTOM 2 back as soon as you see a low battery capacity warning.

(2) Keeping the battery contact needles and pads clean is very important. Any dirt and dust may cause a communication failure.

6.6 Flight Limits Function

All UAV (unmanned aerial vehicle) operators should abide by all regulations from such organizations at ICAO (International Civil Aviation Organization) and per country airspace regulations. For safety reasons, the flight limits function is enabled by default to help users use this product safely and legally. The flight limits function includes height, distance limits.

In Ready to Fly status, height, distance limits works together to restrict the flight. In Ready to Fly (non-GPS) status, only height limit works and the flying height restricted to be not over 120m.

(1) The default parameters in the Assistant is compliant within the definitions of class G ruled by ICAO. (Refer to Airspace Classification to get more details). As each country has its own rules, make sure to configure the parameters to comply with these rules too, before using the PHANTOM 2.

(2) Users in Mainland China can refer to 民用航空空域使用办法.

Max Height & Radius Limits

The Max Height & Radius restricts the flying height and distance. Configuration can be done in the PHANTOM 2 Assistant. Once complete, your aircraft will fly in a restricted cylinder.

Figure 6-3

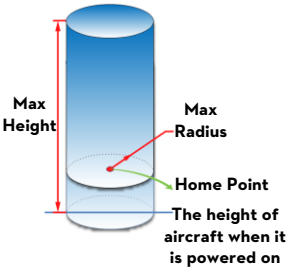


Figure 6-4

Ready to Fly			
	Limits	**Ground Station**	**Rear LED flight indicator**
Max Height	The flight height is restricted to fly under the max height.	Warning: Height limit reached.	None.
Max Radius	The flight distance is restricted to fly within the max radius.	Warning: Distance limit reached.	Rapid red flashings when close to the Max radius limit.

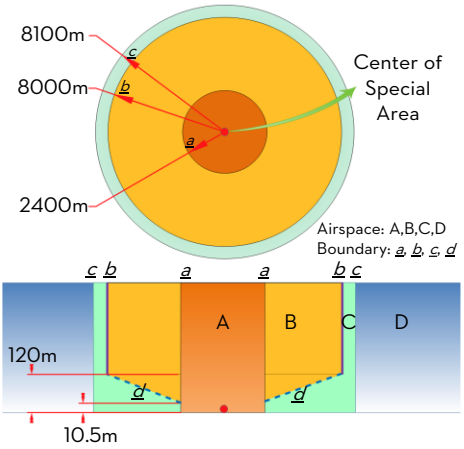
Ready to Fly(non-GPS)			
	Flight Limits	**Ground Station**	**Rear LED flight indicator**
Max Height	The flight height is restricted to fly under the minor height between the Max height and 120m.	Warning: Height limit reached.	None.
Max Radius	Not limited, no warnings or LED indicators.		

(1) If the aircraft flies out of the limits, you can still control your aircraft except to fly it further away.

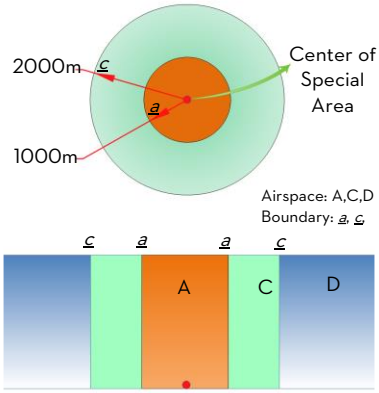
(2) If the aircraft is flying out of the max radius in Ready to Fly (non-GPS) status, it will fly back within the limits range automatically if 6 or more GPS satellites have been found.

6.7 Flight Limits of Special Areas

Special areas include airports worldwide. All special areas are listed on the DJI official website. Please refer to http://www.dji.com/fly-safe/category-mc for details. These areas have been divided into category A and category B.



Category A



Category B

Ready to Fly		
Airspace	**Limits**	**Rear LED Flight Indicator**
A Orange	Motors will not start.	
	If the Phantom flies into a special area in Ready to Fly (non-GPS) mode and Ready to Fly mode activates, it will automatically descend and land then stop its motors.	
B Yellow	If the Phantom flies into a special area in Ready to Fly (non-GPS) mode and Ready to Fly mode activates, it will descend to airspace C and hover 5 meters below edge *d*.	
C Green	No restrictions of flight, but the Phantom will not enter Category A, the aircraft can fly free, but it will not enter Airspace B through Boundary *b & d*. Around Category B sites, the phantom can fly freely, but it will not enter into Airspace A through Boundary *a*.	
D Blue	No restrictions.	None.

Semi-automatic descent: All stick commands are available except the throttle stick command during the descent and landing process. Motors will stop automatically after landing. Users must toggle the S1 switch to regain control. This is the same as regaining control during Failsafe. Please refer to Regaining Control During Failsafe Procedure (Page23).

(1) When flying in the airspace (A/B/C) of restricted special area, LED flight indicators will blink red  quickly and continue for 3 seconds, then switch to indicate current flying status and continue for 5 seconds at which point it will switch back to red blinking.

(2) For safety reasons, please do not fly close to airports, highways, railway stations, railway lines, city centers and other special areas. Try to ensure the aircraft is visible.

6.8 Conditions of Flight Limits

In different working modes and flight modes, flight limits will differ according to number of GPS satellites found. The following table demonstrates all the cases(**√: available;** ×:unavailable).

All flights are restricted by height, distance and special areas simultaneously. The Failsafe and Ground Station operations are not restricted to flight limits, but if Ground Station function is used, the flight will be restricted the special area limits built in to Ground Station. Refer to the Ground Station manual for details.

Phantom mode			
Flight Status	**Limits of Special Area**	**Max Height**	**Max Radius**
Ready to Fly	√	√	√
Ready to Fly (non-GPS)	×	√	×

Naza-M mode				
Control Mode	**number of GPS found**	**Limits of Special Area**	**Max Height**	**Max Radius**
GPS	≥6	√	√	√
	< 6	×	√	×
ATTI.	≥6	√	√	×
	< 6	×	√	×
Manual	≥6	×	×	×
	< 6	×	×	×

Disclaimer

Please ensure that you are kept up to date with International and Domestic airspace rules and regulations before using this product. By using this product, you hereby agree to this disclaimer and signify that you have read this fully. You agree that you are responsible for your own conduct and content while using this product, and for any direct or indirect consequences caused by not following this manual, violate or disregard any other applicable local laws, administrative rules and social habits thereof.

7 Assistant Installation and Configuration

7.1 Installing Driver and PHANTOM 2 Assistant

Installing and running on Windows

1. Download driver installer and Assistant installer in EXE format from the download page of PHANTOM 2 on the DJI website.
2. Connect the PHANTOM 2 to a PC via a Micro-USB cable.
3. Run the driver installer and follow the prompts to finish installation.
4. Next, run the Assistant installer and follow the prompts to finish installation.
5. Double click the PHANTOM 2 icon on your Windows desktop to launch the software.

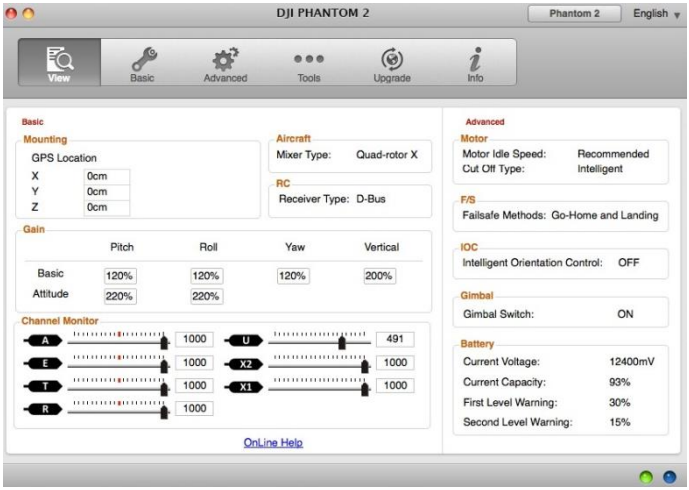
⚠ The installer in EXE format only supports Windows operating systems (Win XP, Win7, Win8 (32 or 64 bit)).

Installing and running on Mac OS X

1. Download the Assistant installer in DMG format from the download page of PHANTOM 2 on the DJI website.
2. Run the installer and follow the prompts to finish installation.

3. When launching for the first time if use Launchpad to run the PHANTOM 2 Assistant, Launchpad won't allow access because the software has not been reviewed by Mac App Store.

4. Locate the PHANTOM 2 icon in the Finder, press the Control key and then click the PHANTOM 2 icon (or right-click the PHANTOM 2 icon using a mouse). Choose Open from the shortcut menu, click open in the prompt dialog box and then software will launch.
5. After the first successful launch, directly launching of the software can be achieved by double-clicking the PHANTOM 2 icon in the Finder or using Launchpad.

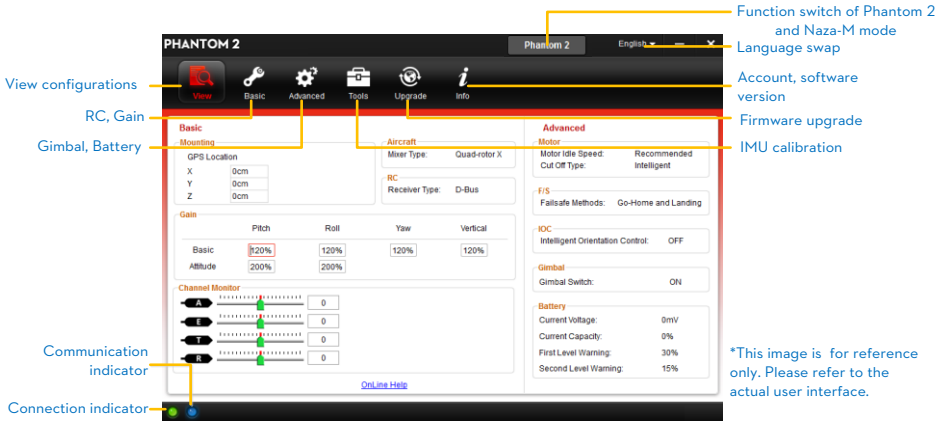


Installer in DMG format supports only Mac OS X 10.6 or above.

Usage of PHANTOM 2 Assistant on Mac OS X and Windows are exactly the same. The Assistant pages appear in other places of this manual are on the Windows for example.

7.2 Using the PHANTOM 2 Assistant on a PC

1. Start up the PC, power on the PHANTOM 2, then connect the PHANTOM 2 to the PC with a Micro-USB cable. DO NOT disconnect until configuration is finished.
2. Run the PHANTOM 2 Assistant and wait for the PHANTOM 2 to connect to the Assistant. Observe the indicators on the bottom of the screen. When connected successfully, the connection indicator is and communication indicator is blinking .
3. Choose [Basic] or [Advanced] configuration pages.
4. View and check the current configuration in the [View] page.



(1) Users should not enable the Naza-M function before finishing Advanced Flight Maneuvers procedure in the " PHANTOM Pilot Training Guide". If the Naza-M mode is enabled, users can switch the control mode between ATTI. Mode, GPS Mode or Manual Mode, and access the advanced settings (e.g. IOC). In addition, the LED located on the rear frame arms will display Naza-M flight status indications instead of the PHANTOM 2's indicators. Do not enable the Naza-M mode unless you are an experienced user or guided by a professional.

(2) You can change to the Phantom 2 mode by clicking the same button used to turn on the Naza-M mode. This operation will disable the Naza-M mode and enable Phantom 2 mode. All parameters will be returned to factory settings.

7.3 Firmware upgrade of PHANTOM 2

Please refer to the PHANTOM 2 Assistant to install driver and PHANTOM RC Assistant, and then follow the procedures below to upgrade the software and firmware; otherwise the PHANTOM 2 might not work properly.

1. An internet connection is required to upgrade PHANTOM 2's firmware.
2. Click the [Upgrade] icon to check the current firmware version and whether the installed firmware is the latest version. If not, click the relative links to upgrade.
3. Be sure to wait until the Assistant shows "finished". Click OK and power cycle the PHANTOM 2 after 5 seconds. Once completed, the firmware is up to date.

(1) DO NOT power off until the upgrade is finished.

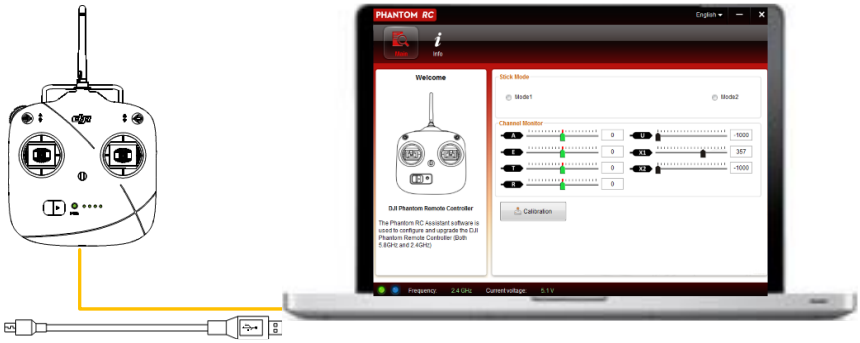
(2) If the firmware upgrade failed, the main controller will enter a waiting for firmware upgrade status automatically. If this happens, repeat the above procedures.

Firmware upgradable items: (1) Main Controller (2) P330CB(Main Board) (3) Receiver (4) Gimbal CMU (5) Gimbal IMU (6) Battery

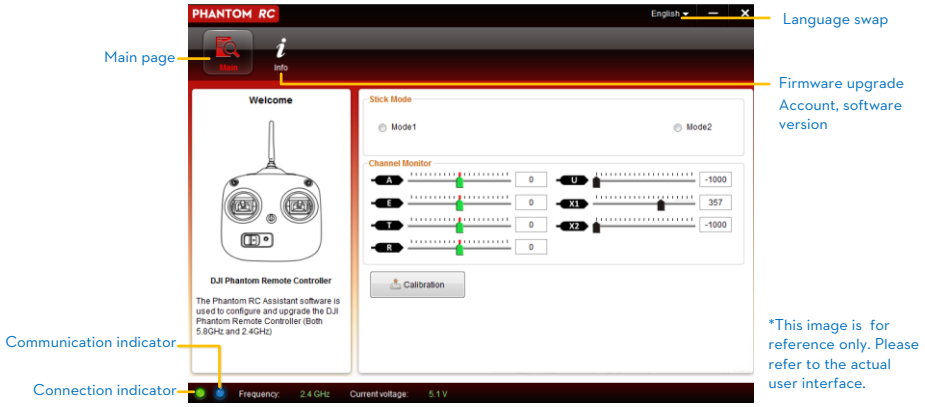
7.4 PHANTOM RC Assistant Description

Please follow the procedures to finish the configuration of the remote control.

1. Turn off the remote control and find the Micro-USB port on the bottom of it.
2. Start up the PC, power on the remote control, and then connect the remote control to the PC with a Micro-USB cable. DO NOT disconnect until the configuration is finished.
3. Run the PHANTOM RC Assistant and wait for the remote control to connect to the Assistant. Observe the indicators on the bottom left of the screen. When connected successfully, the connection indicator is and communication indicator is blinking.
4. Finish configuration in the [Main] page.
5. Finish upgrade in the [Info] page if necessary.



Main Page of the 2.4GHz Remote Control



8 Appendix

8.1 Specifications

Aircraft	
Operating environment temperature	-10℃ to 50℃
Power consumption	5.6W
Supported Battery	DJI Intelligent battery
Weight (including the battery)	1000g
Take-off Weight	≤1300g
Hovering Accuracy (Ready to Fly)	Vertical: 0.8m; Horizontal: 2.5m
Max Yaw Angular Velocity	200°/s
Max Tilt Angle	35°
Max Ascent / Descent Speed	Ascent: 6m/s; Descent: 2m/s
Max Flight Speed	15m/s (Not Recommended)
Wheelbase	350mm
2.4GHz Remote Control	
Operating Frequency	2.4GHz ISM
Communication Distance (open area)	1000m
Receiver Sensitivity (1%PER)	-97dBm
Working Current/Voltage	120 mA@3.7V
Built-in LiPo Battery Working Current/Capacity	3.7V, 2000mAh
DJI Intelligent Battery	
Type	3S LiPo Battery
Capacity	5200mAh, 11.1V
Charging Environment Range	0℃ to 40℃
Discharging Environment Range	-20℃ to 50℃

8.2 LED Flight Indicators Description

Aircraft in Normal status	Descriptions
	Power On Self-Test
	Warming Up & Aircraft cannot take off during warming up
	Ready to Fly
	Ready to Fly (non-GPS)
Aircraft in abnormal status	**Warnings and errors**
	Remote Control Signal Lost
	1st Level Low Battery Capacity Warning

	2nd Level Low Battery Capacity Warning
	Not Stationary or Sensor Bias is too big
	Errors & Aircraft cannot fly.*
	Compass data abnormal because of ferro-magnetic interference or the compass needs calibration.

* Users can connect to the PHANTOM 2 Assistant to get detailed information about warnings and errors.

I UNITED STATES OF AMERICA XI

DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

IV NAME
ATILANO LUIS NUNEZ

V ADDRESS 5310 TYLER ST
HOLLYWOOD FL 33021-6436

VI NATIONALITY USA	SEX	HEIGHT	WEIGHT	HAIR	EYES
IVa D.O.B. 22 NOV 1974	M	72	205	BLACK	BROWN

IX HAS BEEN FOUND TO BE PROPERLY QUALIFIED TO EXERCISE THE PRIVILEGES OF

II PRIVATE PILOT
III CERTIFICATE NUMBER 3608178
X DATE OF ISSUE 5 DEC 2011

XIV
VIII ADMINISTRATOR

I UNITED STATES OF AMERICA XI

DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

IV NAME
LUIS FELIPE MARROU

V ADDRESS 407 LINCOLN RD STE 9J
MIAMI BEACH FL 33139-3016

VI NATIONALITY USA	SEX	HEIGHT	WEIGHT	HAIR	EYES
IVa D.O.B. 12 MAY 1960	M	69	165	BROWN	BROWN

IX HAS BEEN FOUND TO BE PROPERLY QUALIFIED TO EXERCISE THE PRIVILEGES OF

II PRIVATE PILOT
III CERTIFICATE NUMBER 3237516
X DATE OF ISSUE 25 MAY 2007

XIV
VIII ADMINISTRATOR

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UNITED STATES OF AMERICA
Department of Transportation
Federal Aviation Administration

MEDICAL CERTIFICATE THIRD CLASS

This certifies that *(Full name and address):*
LUIS Felipe MARROU JR
12505 sw 112 court
Miami FL 33176 USA

Date of Birth	Height	Weight	Hair	Eyes	Sex
05/12/1960	69	171	BROWN	BROWN	M

has met the medical standards prescribed in part 67, Federal Aviation Regulations, for this class of Medical Certificate.

Limitations
None

Examiner
Date of Examination: 01/17/2014
Examiner's Designation No.: 21289
Signature
Typed Name: KEVIN B FOX DO

AIRMAN'S SIGNATURE

Applicant ID: 1995137829 Control No.: 20000631954

FAA Form 8500-9 (9-08) Supersedes Previous Edition NSN: 0052-00-670-7002

(Cut on

UNITED STATES OF AMERICA
Department of Transportation
Federal Aviation Administration

GG-0807237

MEDICAL CERTIFICATE THIRD CLASS AND STUDENT PILOT CERTIFICATE

This certifies that *(Full name and address):*
ATILANO NUNEZ
2017 showboat plaza
LABELLE, FLORIDA 33935

Date of Birth	Height	Weight	Hair	Eyes	Sex
11/22/1974	72	205	blk	brn	male

has met the medical standards prescribed in part 67, Federal Aviation Regulations, for this class of Medical Certificate.

Limitations
NONE

Examiner
Date of Examination: 07/17/2011
Examiner's Designation No.: 11970-1
Signature
Typed Name: JAMES K. CLARY D.O.

AIRMAN'S SIGNATURE

FAA Form 8420-2 (9-08) Supersedes Previous Edition

STUDENT PILOT CERTIFICATE

...DITIONS OF ISSUE: This certificate shall be in the personal possession of the airman at all ...s while exercising the privileges of his or her airman certificate. The issuance of a medical certificate ... Aviation Medical Examiner may be reversed by the FAA within 60 days. Section 61.19 of Title 14 ... Code of Federal Regulations (14 CFR part 61) sets forth the duration of a student pilot certificate. ...ss otherwise limited, the duration of a medical certificate is set forth in § 61.23. The holder of this ...icate is governed by the provisions of § 61.53 relating to medical deficiency (14 CFR part 61).

CERTIFICATED INSTRUCTOR'S ENDORSEMENT FOR STUDENT PILOTS

...ertify that the holder of this certificate has met the requirements of the regulations and is ...mpetent for the following:

Following Aircraft

DATE	MAKE AND MODEL OF AIRCRAFT	INSTRUCTOR'S SIGNATURE	INSTRUCTOR'S CERT. No.	Exp. Date
6/3/11	C-172		1809191	5/31/13
10/10/11	CE-172		3366331CFI	9/30/13

Country Flights

DATE	Aircraft Category	INSTRUCTOR'S SIGNATURE	INSTRUCTOR'S CERT. No.	Exp. Date
7/3/11	Airplane C-172		1809191	5/31/13
10/22/11	Other AIRPLANE C-172		3366331CFI	9/30/13
11/12/11	Rotorcraft Airplane		3379... CFI	7/13

SKYVIEW FILMS UAS PILOT LOGBOOK: FELIPE MARROU.

DATE	AIRCRAFT	LOCATION	TIME	ALT Ft	DIST Ft	WX	PIC	VO	NOTES
1/5/2014	X PRO HELI 4	Miami. FL	2	100	100		Felipe Marrou	Luis Pacheco	Emerg. Procedures Practice
1/10/2014	X PRO HELI 4	Palm Island. FL	2	40	80		Felipe Marrou	Cristina Paredes	Flight over home
1/11/2014	X PRO HELI 4	Palm Island. FL	2	50	100		Felipe Marrou	Cristina Paredes	FLT over home and surroundings
1/11/2014	X PRO HELI 4	Miami. FL	1	60	150		Felipe Marrou	Dan Shaw	South Pointe FLT Practice
1/27/2014	X PRO HELI 4	Miami. FL	1	20	50		Felipe Marrou	Dan Shaw	Miami Bch, West Av.
1/28/2014	X PRO HELI 4	Everglades, FL	2.5	120	150		Felipe Marrou	Reinaldo Becerra	Private Ranch
5/25/2014	X PRO HELI 4	ontego Bay. Jamai	2.5	50	100		Felipe Marrou	Juan Pena	FLT over river
5/25/2014	X PRO HELI 4	ontego Bay. Jamai	2	80	200		Felipe Marrou	Todd Hedge	Horses in ocean
05/26/14	X PRO HELI 4	ontego Bay. Jamai	1.5	60	500		Felipe Marrou	Todd Hedge	Flew over horses barn
05/26/14	X PRO HELI 4	ontego Bay. Jamai	1	30	150		Felipe Marrou	Juan Peña	Flew over mansion
05/27/14	X PRO HELI 4	Ocho Rios, Jamaic	2	50	80		Felipe Marrou	Todd Hedge	Flew over waterfalls
05/28/14	X PRO HELI 4	Ocho Rios, Jamaic	1	100	200		Felipe Marrou	Todd Hedge	Flew over ocean coast
05/28/14	X PRO HELI 4	Ocho Rios, Jamaic	1.5	100	200		Felipe Marrou	Chris Charles	Flew over horses stable
05/29/14	X PRO HELI 4	ontego Bay. Jamai	2	150	300		Felipe Marrou	Todd Hedge	flew over jungle river
05/30/14	X PRO HELI 4	ontego Bay. Jamai	1.5	300	200		Felipe Marrou	Todd Hedge	Flying over downtown
05/31/14	X PRO HELI 4	ontego Bay. Jamai	2	200	100		Felipe Marrou	Todd Hedge	Over Jungle
06/09/14	Phantom 2	Park	2.5	60	200		Felipe Marrou	Adrian Peschiera	test fly UAS
06/10/14	Phantom 2	Park	1.5	60	150		Felipe Marrou	Andrea Marrou	practice emergency procedures
06/15/14	Phantom 2	Jungle Island	1.5	100	200		Felipe Marrou	Katherine Mcaninh	Over water
06/18/14	Phantom 2	Park	3	80	180		Felipe Marrou	Luis Pacheco	practice emergency procedures
06/26/14	Phantom 2	Big Cypress	3	80	200		Felipe Marrou	Rey Becerra	jungle
06/27/14	Phantom 2	Big Cypress	3	80	180		Felipe Marrou	Rey Becerra	jungle
07/01/14	Phantom 2	Key Largo	2.5	60	100		Felipe Marrou	Frazier Nivens	Shooting onboard Yatch Ocean
07/03/14	Phantom 2	Big Cypress	2.5	120	170		Felipe Marrou	Rey Becerra	Flew over ranch
07/04/14	Phantom 2	Big Cypress	2	80	150		Felipe Marrou	Rey Becerra	over ranch
07/04/14	Phantom 2	Big Cypress	2	80	180		Felipe Marrou	Rey Becerra	over ranch
07/04/14	Phantom 2	Big Cypress	2	100	200		Felipe Marrou	Rey Becerra	over ranch
07/05/14	Phantom 2	Big Cypress	2	70	200		Felipe Marrou	Rey Becerra	over ranch
07/05/14	Phantom 2	Big Cypress	1	50	80		Felipe Marrou	Rey Becerra	over ranch
07/06/14	Phantom 2	Big Cypress	1.5	100	180		Felipe Marrou	Rey Becerra	over ranch
07/07/14	Phantom 2	Miami. FL	3	80	200		Felipe Marrou	Cristina Paredes	training on park

Pilot Signature: 

SKYVIEW FILMS UAS PILOT LOGBOOK: FELIPE MARROU.

DATE	AIRCRAFT	LOCATION	TIME	ALT Ft	DIST Ft	WX	PIC	VO	NOTES
07/13/14	Phantom 2	Maine	2	60	100		Felipe Marrou	Keith Asplundh	Over Hunters Ranch
07/13/14	Phantom 2	Maine	2	80	200		Felipe Marrou	Keith Asplundh	Over Hunters Ranch
07/14/14	Phantom 2	Maine	3	100	250		Felipe Marrou	Keith Asplundh	Over Hunters Ranch
07/14/14	Phantom 2	Maine	2	300	500		Felipe Marrou	Keith Asplundh	Over Hunters Ranch
07/15/14	Phantom 2	Maine	2.5	400	300		Felipe Marrou	Keith Asplundh	Over Hunters Ranch
07/15/14	Phantom 2	Maine	3	100	100		Felipe Marrou	Keith Asplundh	Over Hunters Ranch
07/15/14	Phantom 2	Maine	3	100	100		Felipe Marrou	Keith Asplundh	Over Hunters Ranch
07/16/14	Phantom 2	Maine	1	150	150		Felipe Marrou	Keith Asplundh	Over Hunters Ranch
07/16/14	Phantom 2	Maine	3	200	300		Felipe Marrou	Keith Asplundh	Over Hunters Ranch
07/17/14	Phantom 2	Maine	1	350	150		Felipe Marrou	Keith Asplundh	Over Hunters Ranch
07/17/14	Phantom 2	Maine	1	250	200		Felipe Marrou	Keith Asplundh	Over Hunters Ranch
07/18/14	Phantom 2	Maine	3	100	200		Felipe Marrou	Keith Asplundh	Over Hunters Ranch
07/18/14	Phantom 2	Maine	2	180	300		Felipe Marrou	Keith Asplundh	Over Hunters Ranch
07/19/14	Phantom 2	Maine	2	80	200		Felipe Marrou	Keith Asplundh	Over Hunters Ranch
07/19/14	Phantom 2	Maine	3	400	300		Felipe Marrou	Keith Asplundh	Over Hunters Ranch
07/22/14	Phantom 2	Key Largo	1.5	300	200		Felipe Marrou	Frazier Nivens	Flying Over Islands
07/23/14	Phantom 2	Key Largo	2	300	200		Felipe Marrou	Frazier Nivens	Flying Over Islands
07/28/14	Phantom 2	azil, Bello Horizon	3	500	400		Felipe Marrou	Todd Hedge	Over Mine
07/28/14	Phantom 2	azil, Bello Horizon	2	500	400		Felipe Marrou	Todd Hedge	Over Mine
07/29/14	Phantom 2	azil, Bello Horizon	2	500	400		Felipe Marrou	Todd Hedge	Over Mine
07/29/14	Phantom 2	azil, Bello Horizon	1.5	500	400		Felipe Marrou	Todd Hedge	Over Mine
07/30/14	Phantom 2	azil, Bello Horizon	2	500	400		Felipe Marrou	Todd Hedge	Over Mine
07/30/14	Phantom 2	azil, Bello Horizon	1.5	500	400		Felipe Marrou	Todd Hedge	Over Mine
08/14/14	Phantom 2	Clewiston, FL	1.5	50	200		Felipe Marrou		Corn Fields
08/14/14	Phantom 2	Clewiston, FL	2	80	300		Felipe Marrou		Corn Fields
08/15/14	Phantom 2	Clewiston, FL	3	50	200		Felipe Marrou		Corn Fields
08/15/14	Phantom 2	Clewiston, FL	2	80	300		Felipe Marrou		Corn Fields
09/02/14	Phantom 2	Dominican Republi	2	500	600		Felipe Marrou	Juan Pena	Flying Over Hotels Area Ocean
09/03/14	Phantom 2	Dominican Republi	1	400	500		Felipe Marrou	Todd Hedge	Flying Over Mine
09/03/14	Phantom 2	Dominican Republi	2	400	500		Felipe Marrou	Todd Hedge	Hotel Casa Bonita
09/04/14	Phantom 2	Dominican Republi	2.5	500	800		Felipe Marrou	Todd Hedge	Flying over beaches
			Page Hr Total:65		Total Time:				

Pilot Signature: 

SKYVIEW FILMS UAS PILOT LOGBOOK: FELIPE MARROU.

DATE	AIRCRAFT	LOCATION	TIME	ALT Ft	DIST Ft	WX	PIC	VO	NOTES
09/04/14	Phantom 2	Dominican Republi	2	500	800		Felipe Marrou	Todd Hedge	Flying Over Beaches and Hotel
09/05/14	Phantom 2	Dominican Republi	2	500	500		Felipe Marrou	Todd Hedge	Flying over beaches
11/03/14	Phantom 2	Fort Lauderdale, Fl	2	60	150		Felipe Marrou		Canals and houses
11/21/14	Phantom 2	Tarpon Springs, Fl	2.5	60	100		Felipe Marrou	Robert Copland	Beaches & Town
11/22/14	Phantom 2	Tarpon Springs, Fl	2.5	60	60		Felipe Marrou	Robert Copland	Shooting around park
11/25/15	Phantom 2	North Miami	1	80	100		Felipe Marrou	George	FIU Campus Park
12/13/14	Phantom 2	Miami. FL	1	80	60		Felipe Marrou		Training Home
12/13/14	Phantom 2	Miami. FL	1	40	150		Felipe Marrou		Training Home
12/14/14	Phantom 2	Miami. FL	1.5	80	300		Felipe Marrou		Training Home
12/16/14	Phantom 2	Miami. FL	1.5	100	400		Felipe Marrou		Training Home emergency procedures
12/18/14	Phantom 2	Sunny Isles, FL	0.7	150	150		Felipe Marrou		Building Construction
12/18/14	Phantom 2	Riviera Beach, FL	0.5	50	50		Felipe Marrou		Construction site
12/21/14	Phantom 2	Lee Hay, FL	1	50	100		Felipe Marrou	Atilano Nuñez	Pilots the 99's demonstration
12/22/14	Phantom 2	Miami. FL	1	50	200		Felipe Marrou		Home Practice Emergency Procedures
12/23/14	Phantom 2	Miami. FL	0.5	80	200		Felipe Marrou		Home Practice Emergency Procedures
12/26/14	Phantom 2	Miami. FL	1	50	150		Felipe Marrou		Practice
12/28/14	Phantom 2	Miami. FL	1.5	80	200		Felipe Marrou		Practice
01/27/15	Phantom 2	Naples, FL	1	80	400		Felipe Marrou		
01/28/15	Phantom 2	Naples, FL	1.5	100	200		Felipe Marrou		
01/29/15	Phantom 2	Naples, FL	1	80	150		Felipe Marrou		
01/30/15	Phantom 2	Naples, FL	0.8	150	300		Felipe Marrou		
02/02/15	Phantom 2	Jupiter, FL	2	150	500		Felipe Marrou	Todd Hedge	Travel Show
02/06/15	Phantom 2	Santo Domingo, DI	1	80	300		Felipe Marrou	Todd Hedge	Travel Show
02/07/15	Phantom 2	Santo Domingo, DI	2	200	400		Felipe Marrou	Todd Hedge	Travel Show
02/08/15	Phantom 2	Santo Domingo, DI	2	300	200		Felipe Marrou	Todd Hedge	Travel Show
02/09/15	Phantom 2	La Romana, DR	2	150	300		Felipe Marrou	Todd Hedge	Flew drone while cruising in the boat and back in boat
02/10/15	Phantom 2	La Romana, DR	2	200	400		Felipe Marrou	Todd Hedge	Flew drone from moving boat and brought back to boat. Night shooting Amphitheatre performance
02/11/15	Phantom 2	Samana, DR	2	400	500		Felipe Marrou	Todd Hedge	Flew drone over islands from the moving

Pilot Signature: 

SKYVIEW FILMS UAS PILOT LOGBOOK: FELIPE MARROU.

02/12/15	Phantom 2	Samana, DR	2	500	500		Felipe Marrou	Todd Hedge	Flew drone while cruising in the boat and back in boat
02/13/15	Phantom 2	Samana, DR	2	300	400		Felipe Marrou	Todd Hedge	Flew drone while cruising in the boat and back in boat
			170						

Pilot Signature:

SKYVIEW FILMS UAS PILOT LOGBOOK: ATILANO NUNEZ.

DATE	AIRCRAFT	LOCATION	TIME	ALT Ft	DIST Ft	WX	PIC	VO	NOTES
8/2/2014	DJI Phantom 2	HWO Indian Rez	0.5	6	12	INDOORS	Atilano Nunez	John Voth	Unboxing, Assembly, Indoor Test.
8/3/2014	DJI Phantom 2	HWO Indian Rez	1	100	100	090@8	Atilano Nunez	Ishma Fray	GPS Test, return to home, TO&Landings
8/6/2014	DJI Phantom 2	HWO Indian Rez	1	200	300		Atilano Nunez	John Voth	Flight Manuevers, Emergency Procedures.
8/15/2014	DJI Phantom 2	BC Indian Rez	1	200	300		Atilano Nunez	John Voth	Open Field Test.
8/21/2014	DJI Phantom 2	HWO Indian Rez	1	200	300		Atilano Nunez	John Voth	Flight Manuevers, Emergency Procedures.
9/2/2014	DJI Phantom 2	BC Indian Rez	1	200	300		Atilano Nunez	David Diaz	Cattle Count Data gathering.
9/3/2014	DJI Phantom 2	BC Indian Rez	1	200	400		Atilano Nunez	David Diaz	Cattle Count Data gathering.
9/10/2014	DJI Phantom 2	HWO Indian Rez	1	200	300		Atilano Nunez	John Voth	Takeoff & Landings, Return To Home Proc.
9/25/2014	DJI Phantom 2	Brighton Indian Rez	1	200	300		Atilano Nunez	John Voth	Homesite Aerial Data
9/26/2014	DJI Phantom 2	Brighton Indian Rez	1	300	400		Atilano Nunez	John Voth	Cattle Count Data gathering.
10/12/2014	DJI Phantom 2	HWO Indian Rez	1	200	200		Atilano Nunez	David Diaz	Rec Center Aerial Video
10/16/2014	DJI Phantom 2	HWO Indian Rez	1	150	100		Atilano Nunez	John Voth	Company Façade video
10/20/2014	DJI Phantom 2	HWO Indian Rez	0.5	8	10	INDOORS	Atilano Nunez	Ishma Fray	Indoor practice
10/26/2014	DJI Phantom 2	HWO Indian Rez	1	300	300	080@7	Atilano Nunez	Simone Berger	Hollywood Reservation Ballfield
11/11/2014	DJI Phantom 2	Brighton Indian Rez	1	200	200		Atilano Nunez	John Voth	Veterans Day Aerials
11/19/2014	DJI Phantom 2	Brighton Indian Rez	1	300	300		Atilano Nunez	John Voth	Cattle Count Data gathering.
11/20/2014	DJI Phantom 2	Brighton Indian Rez	1	300	300		Atilano Nunez	John Voth	Cattle Count Data gathering.
11/25/2014	DJI Phantom 2	BC Indian Rez	1	300	300		Atilano Nunez	David Diaz	Cattle Count Data gathering.
11/26/2014	DJI Phantom 2	BC Indian Rez	1	300	300		Atilano Nunez	David Diaz	Cattle Count Data gathering.
12/12/2014	DJI Phantom 2	Brighton Indian Rez	1.5	250	600	KOBE 121855Z 30005KT 10SM	Atilano Nunez	Simone Berger	Vets Bdg, Elders Bdg, Red Barn
12/18/2014	DJI Phantom 2	HWO Indian Rez	1	150	250	KHWO 182053Z VRB05KT 10SM	Atilano Nunez	Sasha Cancel	Rec Building, Village Construction
12/30/2014	DJI Phantom 2	BC Indian Rez	1	200	400		Atilano Nunez	John Voth	Cypress Trees for animation
1/11/2015	DJI Phantom 2	Hollywood, FL					Atilano Nunez		Att FLT. Emerg Proced RT Home ops
1/20/2015	DJI Phantom 2	Markham Park RC Field	1	350	800		Atilano Nunez	John Voth	Att FLT. Emerg Proced RT Home ops
1/29/2015	DJI Phantom 2	BC Indian Rez	1	200	500		Atilano Nunez	Simone Berger	Youth House, Skate Park.
2/2/2015	DJI Phantom 2	Hollywood, FL	1	100	200	KHWO 022253Z 26012KT 10SM	Atilano Nunez	A. Nunez Sr.	Flight Manuevers, Emergency Procedures.
2/4/2015	DJI Phantom 2	Markham Park. Weston, F	1	350	500	KHWO 042053Z 11010KT 10SM	Atilano Nunez	John Voth	Flight Manuevers, Emergency Procedures.
2/13/2015	DJI Phantom 2	Brighton Indian Rez	1				Atilano Nunez	John Voth	Seminole Field Day Celebration
2/14/2015	DJI Phantom 2	Brighton Indian Rez	1				Atilano Nunez	John Voth	Seminole Field Day Celebration
2/15/2015	DJI Phantom 2	Brighton Indian Rez	1				Atilano Nunez	John Voth	Seminole Field Day Celebration
2/16/2015	DJI Phantom 2	Hollywood, FL	1	200	400		Atilano Nunez	A. Nunez Sr.	Att FLT. Emerg Proced RT Home ops
2/17/2015	DJI Phantom 2	Hollywood, FL	1	200	400		Atilano Nunez	A. Nunez Sr.	Att FLT. Emerg Proced RT Home ops
			30.5						

Signature: