U.S.Department
of Transportation

**Federal Aviation
Administration**

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

May 4, 2015

Exemption No. 11452
Regulatory Docket No. FAA–2015–0233

Mr. Edward Youn
Owner
Jason Youn Photography, LLC
2342 West 8th Avenue
Mesa, AZ 85202

Dear Mr. Youn:

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 January 22, 2015, you petitioned the Federal Aviation Administration (FAA)
on behalf of Jason Youn Photography, LLC (hereinafter petitioner or operator) for an
exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to
conduct aerial videography and cinematography, mapping, and enhance academic community
awareness.

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.

Airworthiness Certification

The UAS proposed by the petitioner are the DJI Phantom Vision 2 Plus+, DJI S900, and DJI
Inspire 1.

The petitioner requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*. 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 the requested relief from 14 CFR part 21 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, Jason Youn Photography, 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, Jason Youn Photography, LLCis 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 Vision 2 Plus+, DJI S900, and DJI Inspire 1 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

Edward Youn, owner of Jason Youn Photography LLC Phoenix AZ - Section 333 Exemption Petition

Thursday, January 22, 2015

U. S. Department of Transportation Docket Management System
1200 New Jersey Ave, SE Washington, DC 20590

Re: Exemption Request Section 333 of the FAA Reform Act of the Federal Aviation Regulations from 14 C.F.R. 45.23(b); 14 C.F.R. Part 21; 14 C.F.R. 61.113(a)&(b); 91.7(a); 91.9(b) (2); 91.103(b); 91.109; 119.121; 91.151(a); 91.203(a)&(b); 91.405(a); 91.407(a) (1); 91.409(a) (2); 91.417(a)&(b)

Dear Sir or Madam,

I, Edward Youn, an FAA licensed pilot, am writing pursuant to the FAA Modernization and Reform Act of 2012 and the procedures contained within 14 C.F.R. 11, to request that Edward Youn, an owner and operator of small unmanned aircraft, be exempted from the Federal Aviation Regulations ("FARs") listed below so that I, Edward Youn, may operate my small ultra light weight unmanned aircraft system ("UAS") commercially in airspace regulated by the Federal Aviation Administration ("FAA").

As described herein I, Edward Youn, am an owner of photographic and educational company, Jason Youn Photography LLC, within the State of Arizona; experienced in flying hobby helicopters and aircraft for recreational purposes. I Edward Youn hold an FAA private pilots license Certificate Number 3375315. I have added a hobby grade quad-[1] UAS to my inventory equipped with a small built in board camera with intent for aerial videography/cinematography, mapping, and to enhance academic community awareness for those individuals and companies unfamiliar with the geographical layout of the metro Phoenix area, and other areas, and augment the business of Jason Youn Photography LLC with both Video and Still images; following exemption and approval by the FAA. Thereby enhancing their academic research experience for the metro Phoenix area, and other areas. I plan to add a second or third quad-copter [2][3] to my inventory in the future with comparable or better safety capabilities.

I, Edward Youn, am an FAA licensed pilot and have flown small aircraft using license number 3375315 for about fifteen (15) years and have flown small RC electric helicopters and aircraft for over ten (10) years without incident. Committed to safety with each flight. My, Edward Youn's, exemption request would permit operation of ultra light weight, unmanned (piloted by remote control) and comparatively inexpensive UAS(s) in tightly controlled and limited airspace. Predetermined in areas away from general public, airports, heliports and vehicular traffic for community videos and photography, and within property boundaries for individual homeowner real estate listing videos/photos. Currently, similar lightweight, remote controlled UAS's are legally operated by

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[1] DJI Phantom Vision 2 Plus + See appendix A for operators Manual

[2] DJI S900 or updated derivation thereof or like models

[3] DJI Inspire 1

unmonitored amateur hobbyists with no safety plan or controls in place to prevent a crash. I, Edward Youn, have personally instilled safety protocols and controls[4] to avoid and prevent public hazard, as well as manned aircraft hazards/catastrophe. This will act to further safety protocols exclusive to lightweight UAS's specific to commercial video and photography, and mapping usage as I, Edward Youn, record flight data and other information gained through permitted flight operations to share with the FAA through any required FAA reports to assist with future protocol and safety regulation.

Granting my, Edward Youn's, request comports with the Secretary of Transportation's (FAA Administrator's) responsibilities and authority to not only integrate UAS's into the national airspace system, 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/Realtor purposes. Further I, Edward Youn, will conduct my operations in compliance with the protocols described herein or as otherwise established by the FAA.

For the reasons stated below I, Edward Youn, respectfully request the grant of an exemption allowing me to operate ultra light weight, remote controlled UAS's for academic community awareness to benefit/stimulate attraction to the metro Phoenix area, and other areas, and to enhance the photographic business offerings of Jason Youn Photography LLC and to real estate listing videos for homeowners who cannot afford expensive manned aircraft for the same purpose. All of which will promote local economic growth through increased employment and increased tax base. All with public safety in mind.

I. Contact Information:

Edward Youn, Owner operator, Jason Youn Photography LLC
2342 W. 8th ave. Mesa, AZ 85202

Office: (480) 207-7209
Email: Help@JasonYoun.com

II. The Specific Sections of Title 14 of the Code of Federal Regulations From Which Edward Youn Requests Exemption are:
14 CFR 21;
14 C.F.R. 45.23(b);
14 CFR 61.113 (a) & (b); 14 C.F.R. 91, et seq.;
14 CFR 407 (a) (1);
14 CFR 409 (a) (2); and, 14 CFR 417 (a) & (b).

III. The Extent of relief Edward Youn seeks and the Reason He Seeks Such Relief:

I, Edward Youn, submit this application in accordance with the Reform Act, 112 P.L. 95 §§ 331-334, seeking relief from any currently applicable FARs operating to prevent me, Edward Youn, contemplated commercial cinematic, academic and other flight operations within the national airspace system. The Reform Act in Section 332 provides

for such integration of civil unmanned aircraft systems into our national airspace system as it is in the public's interest to do so. My, Edward Youn's, ultra light weight UAS meets the definition of "small unmanned aircraft" as defined in Section 331 and therefore the integration of my ultra light weight UAS is expressly contemplated by the Reform Act. I would like to operate my ultra light weight UAS prior to the time period by which the Reform Act requires the FAA to promulgate rules governing such craft. Thereby, providing direct experience and valuable information for formal regulation that can be administered uniformly to related UAS aerial video, photography, and topographical mapping. The Reform Act guides the Secretary in determining the types of UAS's that may operate safely in our national airspace system. Considerations include: The weight, size, speed and overall capabilities of the UAS's; Whether the UAS will be operated near airports or heavily populated areas; and, Whether the UAS will be operated by line of sight. 112 P.L. 95 § 333 (a). Each of these items reflect in favor of an exemption for me, Edward Youn. My UAS utilizes four (4) counter-rotating propellers for balance, control and stability. My UAS is equipped with GPS and auto return safety technology. Weighing less than five (5) pounds (far below the maximum 55 pound limit); including camera with gimbal.

I, Edward Youn, consider safety foremost with each flight. My small unmanned aircraft is designed to hover in place via GPS. Built in safety systems include a GPS mode that allows my UAS to hover in place when radio controls are released. Further, the software within my UAS will not allow it to fly within airspace that is near a major airport and this restricted airspace closely matches "Class B" airspace. To further prevent flying in restricted airspace or crowded airspace I consult a current sectional before each flight. When pilot communication is lost, this and future UASs are designed to slowly return to home and descend to the ground, then automatically shut down operation. I do not operate my UAS near airports, Hospitals or Police heliports, and do not operate near areas where general public safety is concern. I am constantly on alert for any manned aircraft (Police/Medical helicopters, etc.) and prepared to land/abort immediately to the nearest and safest ground point should a manned aircraft approach my location or I suspect manned aircraft may approach near my location. My UAS is capable of vertical and horizontal operations, and are flown only within my line of sight of me, as the remote control pilot. Utilizing battery power rather than combustible fuels, flights generally last between ten (10) to twenty (20) minutes, with an altitude under one hundred fifty (150) feet AGL. I, Edward Youn, utilize a fresh fully charged battery with each flight as a safety precaution; full flight time limit for each battery is twenty two (22) to twenty five (25) minutes as tested. I do not operate my UAS at or below manufacture recommend minimum charge levels for operation; preferring to remain well within a safe operating range to insure adequate communication between radio control and UAS to reduce potential for crash, loss of control or hazard. Reserve batteries are at hand with each exercise to insure replacement for sufficient safe level of operation. I do not taking risk that may cause a crash, that could create hazard to the public/property/manned aircraft, and have no desire to lose an investment. I have clocked numerous practice flights in remote areas as a hobbyist simulating flights for future commercial use to gain familiarization with the characteristics of this specific UAS's performance under different

temperature and weather conditions. I also practice computerized simulated flights to maintain adequate skills and response reflex time. All for the sake of safety.

I, Edward Youn, take extreme caution when operating of my UAS/ultra light weight unmanned aircraft and will not "create a hazard to users of the national airspace system or the public." 112 P.L. 95 § 333 (b). Given the small size and weight of my UAS it falls well within Congress's contemplated safety zone when it promulgated the Reform Act and the corresponding directive to integrate UAS's into the national airspace system. Edward Youn's UAS, used in hobby flight, has a demonstrable safety record and does not pose any threat to the general public or national security.

IV. How Edward Youn's Request Will Benefit the Public As A Whole:

Aerial photography and videography for geographical awareness and for real estate marketing has been around for a long time through manned fixed wing aircraft and helicopters. For small budget real estate companies and average homeowners the expense of such aerial videography is cost prohibitive. Only large companies and high end Realtors or luxury homeowners can afford to absorb such expense. Depriving non-luxury homeowners and lower budget Realtors from a valuable marketing tool. Manned aircraft pose a threat to the public through catastrophic crashes like the one the Phoenix community experienced when two news gathering helicopters sustained a mid air collision inside the PHX class B subsequently crashing into a popular park, setting fire to the area, and claiming four lives. Other manned aircraft both fixed wing and helicopters have made emergency and hard landings within our city limits. These craft carry combustible fuel that can start life threatening fires. My, Edward Youn's, UAS pose no such threat since size and lack of combustible fuel alleviates any potential threat to the public. The low operational altitude minimizes the potential for a mid air collision.

My ultra light weight UAS is battery powered and creates no emissions that can harm the environment. The consequence of my ultra light weight UAS crashing is far less than a full size helicopter or fixed wing aircraft; which are heavy, contain combustible fuel and can cause catastrophic devastation to the public.

Permitting me, Edward Youn, to immediately fly within national air space furthers economic growth. Granting my exemption request substantially furthers the positive economic impact for the community and for companies looking to relocate or build in the Phoenix metro area or other areas as well as individuals looking to relocate for career advancement through academic and geographical awareness. Both of which serve as a stimulus to the community.

V. Reasons Why Edward Youn's Exemption Will Not Adversely Affect Safety Or How The Exemption Will Provide a Level of Safety At Least Equal To Existing Rule:

My, Edward Youn's, exemption will not adversely affect safety. Quite the contrary, not only for he reasons stated in section III and IV but also by permitting me, Edward Youn,

to log more flight time in FAA controlled airspace, with communication with the FAA, will allow me to contribute to the innovation and implementation of new and novel, as of yet undiscovered safety protocols for UAS operators that can be embraced by the FAA. In addition I, Edward Youn, submit the following representations of enhancements to current aerial videography and photography for real estate:

My UAS weighs less than 5 pounds complete with a small ultra light weight high definition board camera on a stabilizing gimbal;

I only operate my UAS below 400 feet AGL and normally below 100 feet AGL (well within the 400 foot AGL permissible ceiling set by the FAA Modernization and Reform Act of 2012);

My current UAS operates for less than 25 minutes per flight;
I land my UAS prior to the manufacturer recommended minimum level of battery power;
I pilot my UAS by line of sight;
My UAS has GPS a flight safety feature whereby it hovers and then slowly lands if communication with the remote control pilot is lost;
I actively analyze flight data and other sources of information to constantly update and enhance safety protocols;
I only operate in reasonably safe environments that are strictly controlled, are away from power lines, elevated lights, airports and densely populated areas;
I conduct extensive pre-flight inspections and protocol, during which safety carries primary importance;
I always obtain all necessary permissions prior to operation; and,
I have procedures in place to abort flights in the event of safety breaches or potential danger.

My, Edward Youn's, safety protocols provide a level of safety equal to or exceeding existing rules. It is important to note that absent the integration of commercial UAS into our national airspace system, helicopters are the primary means of aerial video and photography. While the safety record of such helicopters is notable, there have been local incidents involving loss of life as well as extensive property damage; it is far safer to operate a battery powered ultra light weight UAS.

First, the potential loss of life is diminished because UAS's carry no people on board and I only operate my UAS in specific areas away from mass populations. Second, there is no fuel on board a UAS and thus the potential for fire or explosions is greatly diminished. Third, the small size and extreme maneuverability of my UAS allow me to remotely pilot away from and avoid hazards quickly and safely.
 Accordingly, my UAS has been experimentally operated for familiarization/competency and will continue to operate at or above current safety levels.

VI. A Summary The FAA May Publish in the Federal Register:

A. 14 C.F.R. 21 and 14 C.F.R. 91: Airworthiness Certificates, Manuals and The Like.

14 C.F.R. 21, Subpart H, entitled Airworthiness Certificates, sets forth requirements for procurement of necessary airworthiness certificates in relation to FAR § 91.203(a)(1). The size, weight and enclosed operational area of my, Edward Youn's, UAS permits exemption from Part 21 because my UAS meets (and exceeds) an equivalent level of safety pursuant to Section 333 of the Reform Act. The FAA is authorized to exempt aircraft from the airworthiness certificate requirement under both the Act (49 U.S.C. § 44701 (f)) and Section 333 of the Reform Act. Both pieces of legislation permit the FAA to exempt UAS's from the airworthiness certificate requirement in consideration of the weight, size, speed, maneuverability and proximity to areas such as airports and dense populations. My, Edward Youn's, current and projected UAS's meet or exceed each of the elements.

14 C.F.R. 91.7(a) prohibits the operation of an aircraft without an airworthiness certificate. As no such certificate will be applicable in the form contemplated by the FARs, this Regulation is inapplicable.

14 C.F.R. § 91.9 (b) (2) requires an aircraft flight manual in the aircraft. As there are no on board pilots or passengers, and given the size of the UAS's, this Regulation is inapplicable. An equivalent level of safety will be achieved by maintaining a

B.safety/flight manual delineating areas of where safety can be defined. The FAA has previously issued exemptions to this regulation in Exemption Nos. 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, 10700 and 32827.

14 C.F.R. § 91.121 regarding altimeter settings is inapplicable insofar as my UAS utilizes electronic global positioning systems with a barometric sensor.

14 C.F.R. § 91.203 (a) and (b) provides for the carrying of civil aircraft certifications and registrations. They are inapplicable for the same reasons described above. The equivalent level of safety will be achieved by maintaining any such required certifications and registrations by me, Edward Youn, or by Jason Youn Photography LLC.

14 C.F.R. § 45.23: Marking of The Aircraft.

Applicable Codes of Federal Regulation require aircraft to be marked according to certain specifications. My UAS are, by definition, unmanned. They therefore do not have a cabin, cockpit or pilot station on which to mark certain words or phrases. Further, two-inch lettering is difficult to place on such small aircraft with dimensions smaller that minimal lettering requirement. Regardless, I will mark its UASs in the largest possible lettering by placing the word "EXPERIMENTAL" on its fuselage as required by 14 C.F.R. §45.29 (f) so that I the pilot, or anyone assisting me as a spotter with the UAV will see the markings. The FAA has previously issued exemptions to this regulation through Exemptions Nos. 8738, 10167, 10167A and 10700.

14 C.F.R. § 61.113: Private Pilot Privileges and Limitations: PIC.

Edward Youn, owner of Jason Youn Photography LLC Phoenix AZ - Section 333 Exemption Petition

Pursuant to 14 C.F.R. §§ 61.113 (a) & (b), private pilots are limited to non-commercial operations. I, Edward Youn, can achieve an equivalent level of safety as achieved by current Regulations because my UAS does not carry any pilots or passengers. Further, while helpful, a pilot license will not ensure remote control piloting skills. The risks attended to the operation of my UAS is far less than the risk levels inherent in the commercial activities outlined in 14 C.F.R. § 61, et seq. Thus, allowing me, Edward Youn, to operate my UAS meet and exceed current safety levels in relation to 14 C.F.R. §61.113 (a) & (b).

14 C.F.R. 91.119: Minimum Safe Altitudes.

14 C.F.R. § 91.119 prescribes safe altitudes for the operation of civil aircraft. It allows helicopters to be operated at lower altitudes in certain conditions. My UAS will never operate at an altitude greater than 400 AGL; I, Edward Youn, will however operate my UAS in safe areas away from public and traffic, providing a level of safety at least equivalent to or below those in relation to minimum safe altitudes. Given the size, weight, maneuverability and speed of my UAS, an equivalent or higher level of safety will be achieved.

14 C.F.R. 91.405 (a); 407 (a) (1); 409 (a) (2); 417(a) & (b): Maintenance Inspections.

The above-cited Regulations require, amongst other things, aircraft owners and operators to "have [the] 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. . . ."

These Regulations only apply to aircraft with an airworthiness certificate. They will not, therefore, apply to my, Edward Youn's, UAS. However, as a safety precaution I inspect my UAS before and after each flight.

A Summary The FAA May Publish in the Federal Register: A. 14 C.F.R. 21 and 14 C.F.R. 91: Airworthiness Certificates, Manuals and The Like. 14 C.F.R. 21, Subpart H, entitled Airworthiness Certificates, sets forth requirements for procurement of necessary airworthiness certificates in relation to FAR § 91.203(a)(1). The size, weight and enclosed operational area of my UAS permits exemption from Part 21 because my, Edward Youn's, UAS meets an equivalent level of safety pursuant to Section 333 of the Reform Act. The FAA is authorized to exempt aircraft from the airworthiness certificate requirement under both the Act (49 U.S.C. § 44701 (f)) and Section 333 of the Reform Act. Both pieces of legislation permit the FAA to exempt UAS's from the airworthiness certificate requirement in consideration of the weight, size, speed, maneuverability and proximity to areas such as airports and dense populations. My UAS meets or exceeds each of the elements. 14 C.F.R. 91.7(a) prohibits the operation of an aircraft without an airworthiness certificate. As no such certificate will be applicable in the form contemplated by the FARs, this Regulation is inapplicable. 14 C.F.R. § 91.9 (b) (2) requires an aircraft flight manual in the aircraft. As there are no pilots or passengers, and given the size of the UAS's, this Regulation is inapplicable. An equivalent level of safety will be achieved by maintaining a manual. The FAA has previously issued exemptions to this regulation in Exemption Nos. 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, maintenance program that involves regular software updates and curative measures for any damaged hardware. Therefore, an equivalent level of safety will be achieved.

Edward Youn, owner of Jason Youn Photography LLC Phoenix AZ - Section 333 Exemption Petition

In summary, Edward Youn seeks an exemption from the following Regulations:

14 C.F.R. 21, subpart H; 14 C.F.R. 45.23(b); 14 C.F.R. §§ 61.113 (a) & (b); 14 C.F.R. § 91.7 (a); 14 C.F.R. § 91.9 (b)(2); 14 C.F.R. § 91.103(b); 14 C.F.R. § 91.109; 14 C.F.R. § 91.119; 14 C.F.R. § 91.121; 14 C.F.R. § 91.151(a); 14 C.F.R. §§ 91.203(a) and (b); 14 C.F.R. § 91.405 (a); 14 C.F.R. § 91.407 (a)(1); 14 C.F.R. § 91.409 (a)(2); 14 C.F.R. § 91.409 (a) (2); and, 14 C.F.R. §§ 91.417 (a) & (b) to commercially operate my, Edward Youn's, small unmanned vehicle/lightweight unmanned aircraft vehicle in community awareness and real estate operations, and to develop economic platforms for real estate and to provide topographical mapping services. Currently, area awareness and real estate aerial videography/photography relies primarily on the use of larger aircraft running on combustible fuel. Posing potential risk to the public. Or it relies on the use of maverick pilots flying with little knowledge of airspace, aerodynamics, or aviation law. Granting my, Edward Youn's, a licensed pilot, request for exemption will reduce current risk levels and thereby enhance safety. My UAS craft(s) do not contain potentially explosive fuel, is smaller, lighter and more maneuverable than conventional video and photographic aircraft, and has built in autonomy including no fly zones, altitude limitation, and return to home features, to improve safety. Further, I operate at lower altitudes and in controlled airspace eliminating potential public risk flying to and from established air fields. I, Edward Youn, have been informally analyzing flight information and will compile safety protocols and the implementation of a flight operations manual for photographic usage that exceeds currently accepted means and methods for safe flight. Formal collection of information shared with the FAA will enhance the FAA's internal efforts to establish protocols for complying with the FAA Modernization and Reform Act of 2012. There are no personnel on board my, Edward Youn's, UAS(s) and therefore the likelihood of death or serious bodily injury is significantly diminished. My, Edward Youn's, operation of my UAS(s), weighing less than 55 pounds and traveling at lower speeds within limited areas will provide an equivalent level of safety as that achieved under current FARs. Accordingly I, Edward Youn, respectfully request that the FAA grant my exemption request and am willing to cooperate in sharing information to benefit the FAA, safety of manned aircraft, and the general public at large.

Respectfully submitted,

Edward Youn,
Jason Youn Photography LLC
480-207-7209
Help@JasonYoun.com
2342 W. 8th ave. Mesa, AZ 85202

Edward Youn, owner of Jason Youn Photography LLC Phoenix AZ - Section 333 Exemption Petition

Appendix A Operation Manuals

Vision +

PHANTOM 2 VISION+

User Manual 2014.11

V1.6

Phantom 2 Vision + User Manual V1.6 2014.10

Please read this manual carefully before using the product.

Important Safety Notice

Use your Phantom carefully. It contains sensitive electronic components and may be damaged when dropped, crashed or exposed to water. Never fly a damaged Phantom.

Maintenance

Do not open or attempt to repair Phantom by yourself as doing so may cause damage to the Phantom or cause injury. If the Phantom is not operating normally or has come into contact with liquid, contact a DJI authorized dealer or DJI customer service. Learn more at www.dji.com/support

Battery

Never disassemble, pinch, crush, burn, drop or tread on the DJI smart flight battery. Never short or allow the metal contacts on the battery terminal to touch. Do not expose batteries to extreme temperatures. Always use the DJI approved charger to charge the battery. Keep the DJI battery away from children and store it in a cool, dry place.

Please read the Disclaimer before using your Phantom 2 Vision+.

Using This Manual Key

Warning Important Hints and Tips References or Definitions

Important

Except when specifically stated, all descriptions in this manual are for Phantom mode, not Naza-M mode.

Before Flight

The following tutorials and manuals have been produced to ensure you to make full use of your Phantom 2 Vision+. (1) Disclaimer

(2) Phantom 2 Vision+ Quick Start Guide

(3) Phantom 2 Vision+ User Manual

(4) Phantom Pilot Training Guide

Watching all the tutorial videos and reading the Disclaimer before flight is recommended. Afterwards, prepare your first flight using the Phantom 2 Vision+ Quick Start Guide. Improve your flying skills in subsequent flights using the Phantom Pilot Training Guide. Refer to this manual for more comprehensive information. Experienced users, particularly those with DJI Phantom 2 Vision experience should skip to the Phantom 2 Vision+ Quick Start Guide to begin preparing for flight.

Watch the Tutorial Videos

Please watch the tutorial videos below to learn how to use Phantom 2 Vision+ correctly and safely.

http://www.dji.com/phantom2visionplus/training/

Phantom 2 Vision+ official tutorial videos

Download DJI VISION App

Download and install the DJI VISION App. Choose one of the download methods below.

Search "DJI VISION" on the App Store then follow instructions for iOS version. Search "DJI VISION" on Google Play then follow instructions for Android version.

iOS6.1 or above Android 4.0 or above

Contents

Overview

The Phantom 2 Vision+ is the next evolution of the Phantom 2 Vision. It features the same App enabled First Person View (FPV), high performance camera, remote camera control and in-flight content sharing, but adds to it a high performance 3- axial camera stabilization system. It is ideal for aerial creativity whether photo or video. In addition, it provides ground station function which allows users to plan the flight mission and enables aircraft to flight automatically.

FPV: First Person View, see the world from the perspective of the craft and feel a true flying experience.

1 In the Box

Check that all of the following items have been included in your package before use. If anything is missing, please contact your local dealer.

In the Box
NO. Name
1 Aircraft
2 Propeller Pairs
3 Micro-SD Card
4 Lens Cap
5 Gimbal Clamp

6 Prop Wrench
7 Remote Control
8 AA Batteries
9 DJI Smart Flight Battery
10 Charger
11 Power Cables
12 Plug Adaptors
13 Micro-USB Cable
Picture
Qty. Remarks
1 Integrated gimbal and camera
4 4 with black nut, 4 with grey
1 Inserted in aircraft Micro-SD slot 1 Fixed to camera lens
1 Attached to the gimbal
1 In maintenance packet
Includes attached Phone Holder and Range Extender
4 For Remote Control
1 Inside aircraft
1 110-240V Adaptive
2 GB&CE 2 SAA&BS
For range extender charging and firmware upgrade
1
1

5

Overview
14 Manuals 4
15 Stickers 2
Including: Disclaimer, Phantom Pilot Training Guide, Phantom 2 Vision+ Quick Start Guide, User Manual
Colors: Pink, Blue
In maintenance packet
In maintenance packet
In maintenance packet M3X5(6pcs); M3X8(5pcs)
In maintenance packet
16 Vibration Absorber
19 Landing Pad

2 Introduction
4
2 18 Spare Screws 11
17 Anti-drop Kit
The Phantom 2 Vision+ package includes: Phantom, Camera, Gimbal, Propulsion System, Flight Control System, Remote Control and Wi-Fi Communication System. 5.8 GHz Remote Control Receiver, Flight Control System and 2.4 GHz Wi-Fi Module are inside the Phantom.
Remote Control
5.8GHz
2 sticks, 7 channels
Outside
3-axial Stabilized Gimbal Camera
Motors and Props
Working Modes
Phantom-Ready to Fly and Ready to Fly(non-GPS)
NAZA-M-GPS, ATTI, Manual and Failsafe
Motor
Inside
Flight Control System 2.4GHz Wi-Fi Module 5.8GHz Receiver Electronic Speed Controls(ESCs)
Propeller
Camera
6

Mobile Device,
with DJI VISION App
Mobile Device Holder
Range Extender
Aircraft
Remote Control
Gimbal
Figure 1
4
Choose between Phantom and Naza-M working modes using Phantom 2 Vision+ Assistant. If using Naza-M mode, please refer to the NAZA-M V2 Quick Start Manual for related instructions.
Phantom: Flight settings will be selected automatically depending on whether 6 or more satellites have been found. This mode allows users to configure the Remote Control and gain values, and use Failsafe and battery level warnings.
Naza-M: Flight settings will be identical to the Naza-M V2. Users can choose between GPS, Attitude, or Manual mode. They can also access advanced settings including Intelligent Orientation Control (IOC). Rear LED Flight Indicators will display the flight status according to the Naza-M indicator.
Ready to Fly: When 6 or more GPS satellites have been found, the Flight Control System will lock its home point
and Rear LED Flight Indicators will blink a slow green ( ). This mode is ideal for beginners.
Ready to Fly (non-GPS): When less than 6 GPS satellites have been found, the Flight Control System will stabilize itself less than in full Ready to Fly mode and will require more skilled flying. Rear LED Flight Indicators will blink a slow yellow ( ).

Assembly and Use
Follow the below instructions to prepare for flight.

1 Removing Gimbal Clamp
Pull gimbal clamp in the direction indicated to remove.

Figure 2

2 Preparing the Battery
Ensure all related devices are fully charged before flying the Phantom 2 Vision+.

Device

Remote Control Range Extender Aircraft (including gimbal and
camera) Mobile Device

2.1 DJI Smart Flight Battery
Power supply

2000mAh rechargeable LiPo battery

Charge fully through Micro-USB slot. See Charging the Range Extender (Page 20) for details.

DJI Smart Flight Battery.

Fully charge before using the DJI VISION App.

This battery has been specially designed for the Phantom 2 series. It has a battery capacity of 5200mAh, voltage of 11.1V and charge-discharge management functionality. It can only be charged with a DJI charger or Phantom 2 Car Charger.

Smart Flight Battery DJI Charger

Figure 3 Figure 4

To avoid damage to the gimbal, remove Gimbal Clamp before powering up the Phantom.

Attach the Gimbal Clamp during transportation or long term storage to avoid damage.

Assembly and Use

Removing Gimbal Clamp / Preparing the Battery

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Assembly and Use

DJI Smart Flight Battery Functions

(1) Balance Charging (2) Capacity Display (3) Communication

(4) Overcharge Protection

(5) Over Discharge Protection

(6) Short Circuit Protection

(7) Sleep Protection

(8) Charging Temperature Detection

Battery Specifications

Type

Capacity

Charging Environment Temperature

Discharging Environment Temperature

Charging/Discharging Environment Relative Humidity <80%

Please read the user manual, disclaimer, and battery warnings before use. Users take full responsibility for all operations and usage.

2.2 Usages
Powering on/off

Powering on: Press Circular Power Button once, then press again and hold for 2 seconds to power on. Power Light will go red and Battery Level Indicators will show the current battery level.

Powering off: Press Circular Power Button once, then press again and hold for 2 seconds to turn off. Battery Level Indicators will all go out.

Checking the battery level

Automatically balances the voltage of each battery cell during charging.

Displays current battery levels.

Communicates with Flight Controller about battery voltage, capacity, current and other relevant information.

Charging stops automatically when battery voltage reaches 12.8V to prevent overcharge damage.

Discharging stops automatically when battery voltage reaches 8.4V to prevent over discharge damage.

Automatically cuts power supply when a short circuit is detected.

Sleep mode is entered after 10 minutes of inactivity to save power.

The battery will charge only when the temperature is between 0°C (32°F) and 40°C (104°F).

Preparing the Battery

Figure 5

LED1 LED2

LED3 LED4

Circular Power Button (Built-in Power Light)

Battery Level Indicators

When the battery is powered off, press the Circular Power Button once. Battery Level Indicators will light up to show battery level. See below for details.

Battery Level Indicators will show the current battery level during charging and discharging. The indicators are defined below.

LED is on LED blinks LED is off

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LiPo

11.1V, 5200mAh 0°C~40°C

- 20°C~50°C

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%

Preparing the Battery

Battery life

When the battery is powered off, press and hold the Circular Power Button for 5 seconds to check battery life. Battery Level Indicators will show light up and the Battery Power Indicators will blink for 10 seconds. All lights will then turn off. For details, please see below.

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%
When batter life reaches 0, it is no longer operational.
More battery information is available in the battery tab of the Phantom 2 Vision+ Assistant.

2.3 Charging the Flight Battery

(1) Connect charger to wall socket (100-240V, 50/60Hz, using the Plug Adaptors if necessary).
(2) Connect battery to charger. If the current capacity of the battery is over 75%, you should turn it on before beginning to charge.
(3) Battery Level Indicators will display current capacity level as the battery charges.
(4) Battery is fully charged when Battery Level indicator lights are off. Disconnect the charger and battery when charging is complete.
Figure 6
Assembly and Use
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Assembly and Use

LED1 LED2
LED3 LED4
Current battery level
0%~25% 25%~50% 50%~75% 75%~100% Fully charged
The Smart Flight Battery can be charged using an optional Phantom 2 Car Charger. This can charge the battery in-car or through 3S-6S Li-Po batteries. Contact your authorized dealer or DJI customer service for details.
Battery should only be charged with the charger provided by DJI. DJI does not take any responsibility for damage caused by third party chargers.
If current battery level is over 75%, the battery should be turned on before charging.

2.4 Battery Installation

Push battery into battery compartment according to the below diagram. When you hear a click, the battery has been properly installed.
Figure 7

2.5 Correct Battery Usage Notes

(1) When the battery is turned on, do not connect it to or disconnect it from the Phantom.
(2) Charge and discharge the battery completely once every 20 charge/discharge cycles. Discharge the battery until there is less than 8% power or until it can no longer be turned on, then recharge it to maximum capacity. This power cycling procedure will optimize the battery.
(3) For long term storage, place the battery with only a 40~50% charge in a strong battery box. Discharge and charge the battery once every 3 months to keep it in good condition. Charge amount should be varied in these maintenance charges - (40%~50%)—0%—100%—(40%~50%).
(4) Purchase a new battery after your current battery has been discharged over 300 times. Completely discharge a battery prior to disposal. Please dispose of batteries properly.
(5) Purchase a new battery if your current battery swells up or is damaged in any way.
(6) Never recharge or fly with a battery that is swollen or damaged in any way.
(7) Never charge batteries unattended. Always charge batteries on a non-flammable surface such as concrete and never near any flammable materials.
(8) Safety is extremely important. For more information, please see the Disclaimer.
Discharging methods:
Slow: Place battery in Phantom and turn on. Leave on until there is less than 8% of power left or until the battery can no longer be turned on. See DJI VISION App for battery levels. Motors do not need to be turned on, reducing wear.
Fast: Fly the Phantom outdoors until there is less than 8% of power left or until the battery can no longer be turned on.
10 © 2014 DJI. All Rights Reserved.
An incorrectly installed battery may cause Bad contact,
Unavailable battery information,
Unsafe flight,
Inability to take off.

3 Preparing the Phantom 2 Vision+

The Phantom 2 Vision+ is a quadrotor with a built-in Flight Control System with integrated gimbal and camera. It features an FC Assistant Port, Camera Data Port and a specialized battery compartment for its flight battery. All these features make the Phantom 2 Vision+ easy to assemble and configure.

3.1 Introduction

[1] Propeller (P15)
[2] Motor
[3] Front Sticker
[4] Front LED (P12)
[5] FC Assistant Port (Micro-USB slot) (P46)
[6] Vibration Absorber
[7] Camera LED Indicator (P15)
[8] Camera Function Button (P14)
[9] Anti-drop Kit (P13)
[10] 3-axial Stabilized Gimbal (P12)
[11] Camera Lens (P14)
[12] Rear LED Flight Indicator (P12)
[13] DJI Smart Flight Battery (P7)
[14] Receiver Antenna (P17)
[15] Landing Gear
[16] Camera Data Port (Micro-USB slot) (P14)

[17] Compass (P25)
[18] Micro-SD Slot (P13)

[1]   [3]
[2]   [4]
  [5]   [7]
[6] [8]
[9] [10] [11]
[16] [17]
[18]
[13]
[14] [15]
[12]
Figure 8
Figure 9
Figure 10

3.2 Built-in Flight Control System

The Phantom 2 Vision+ is equipped with a DJI Naza-M V2 Flight Control System. This provides incredible ease of use and stability. Pilots can control the Phantom's movements in many directions, including pitch (forwards and backwards), roll (left and right), elevator (up and down) and yaw (turn left or right). The flight control system also can provide IOC, Failsafe and battery level warnings.

Modules
Flight Controller IMU
GPS & Compass LED Flight Indicators
FC Assistant Port

Functions
Acts as the brains of the complete flight control system, responsible for connecting and controlling all the modules together.
Has a built-in inertial sensor and a barometric altimeter that measures both attitude and altitude.
The compass reads geomagnetic information and assists the GPS (Global Position System) to accurately calculate the position and height of the aircraft.
Indicates the status of flight control system.
The flight control system communicates with the PC Assistant through a Micro-USB cable between the Phantom FC Assistant Port and the PC. Users can use Assistant to configure the aircraft and upgrade the Phantom firmware. Please refer to Using the Phantom 2 Vision+ Assistant (Page 46) for details.
Assembly and Use
Preparing the Phantom 2 Vision+

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Assembly and Use

3.3 LED Flight Indicator Descriptions

LED flight indicators are found at the front and the rear of the Phantom. Front LEDs are for indicating where the nose of the aircraft is. They light up solid red after motors have started spinning. Rear LED Flight Indicators light up to show the aircraft's current flight status once the flight battery is powered on. For details, please see the below table.
Figure 11
Rear LED Flight Indicators
Red, Green, Yellow flashing in turn
Yellow,Green flashing in turn Slow Green flashing
Slow Yellow flashing
Rear LED Flight Indicators
Quick Yellow flashing
Slow Red flashing Quick Red flashing

Three Red flashing off and on ⸺ Solidred
Red, Yellow flashing in turn
Normal
Figure 12
Notes
Aircraft cannot take off.
More than 6 GPS satellites are found. Less than 6 GPS satellites are found.
Notes
Refer to Failsafe Function (Page27) for details.
DJI VISION App will also show warning message.
Front LEDs
Rear LED
Flight Indicators
Power On Self-Test
Warming Up
Ready to Fly
Ready to Fly (non-GPS)
Abnormal
Remote Control Signal Lost
Preparing the Phantom 2 Vision+
Low Battery Level Warning
Critical Low Battery Level DJI VISION App will show warning
Warning
Not Stationary or Sensor Bias is too big
Error
Compass Needs Calibration
message.
Keep aircraft stationary or perform IMU calibration.
Cannotfly.
Refer to Calibrating the Compass (Page25) to get details.
If a solid red LED indicator appears, connect to the Phantom 2 Vision+ Assistant for details and resolution. This may be caused by:

IMU calibration required: Recalibrate IMU using Assistant.
IMU is abnormal: Repair required.
Compass is abnormal: Repair required.
Remote Control mid-point is set abnormally: Refer to How to solve large margin(s) mid-point error? (Page 49)

3.4 3-axial Stabilized Gimbal

The 3-axial stabilized gimbal of the Phantom 2 Vision+ will power on and self-check each time the flight battery is installed and powered on. Its pitch can be controlled using the DJI VISION App. This gimbal has two working modes, Non-FPV mode and FPV mode, with the Non-FPV mode set as default. This can be configured in Phantom 2 Vision+ Assistant or the DJI VISION App.

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Figure 13

Gimbal specifications

Control accuracy Controllable range Maximum angular velocity

±0.03°

Pitch : -90°~0° Pitch : 90°/s

Non-FPV Mode: the gimbal will stabilize across 3-axial for smooth aerial creativity.

FPV Mode (First Person View Mode): Gimbal will lock to the movements of the Phantom for a FPV experience.

Anti-drop Kit

The Anti-drop Kit helps keep the gimbal and camera connected to the aircraft. Two have been mounted on delivery. If new ones are required, take the gimbal and press part [1] through the center hole of the Vibration Absorber the center hole of part [2]. Lock them together as shown in [3]. Mounting the Anti-drop Kit diagonally is recommended.

[1]
[2]
[3]

Once part [1] and part [2] are connected, the Anti-drop Kit cannot be disconnected and reused.

Micro-SD Slot

With flight battery powered off, make sure the Micro-SD card is inserted correctly into the Micro-SD Slot before taking any photos or recording any video.

The Phantom 2 Vision+ comes with a 4GB Micro-SD card and can support cards up to 32GB. The DJI VISION App may not be able to read some Micro-SD cards. Using the DJI VISION App to reformat new Micro-SD cards is recommended.

Refer to Format Micro-SD Card (Page 37) for details.

Figure 15

Before the aircraft takes off, if a gimbal motor error is detected or the gimbal clamp is not removed, there will be a warning prompt on the camera page of the DJI VISION App. This will disappear after the problem is resolved.

Do not insert or remove Micro-SD card when flight battery is powered on.

Gimbal Error Warnings

Figure 16 Figure 17

Figure 14

Assembly and Use

Preparing the Phantom 2 Vision+

13

Assembly and Use

Remove gimbal clamp before powering on flight battery.

Gimbal motor error may occur in these situations: (1) Gimbal is placed on uneven ground. (2) Gimbal has received an excessive external force, e.g. a collision. Please take off from flat, open ground and protect the gimbal after powering up.

Flying in heavy fog or cloud may make the gimbal wet, leading to a temporary failure. The gimbal will recover when it dries out.

3.5 Camera

The Phantom 2 Vision+ camera powers up when the flight battery has been installed and switched on. Photos and videos can be shot by pressing either the onboard button or the DJI VISION App. For aerial photography it supports burst shots, continuous capture and timed capture, and exports to both Adobe DNG Raw and JPEG. For aerial video, it shoots in full HD at (1080p30/1080i60) and can even shoot 720p60 for internet ready slow motion.

Camera specifications

Sensor Size Pixels
Resolution
HD Recording Recording FOV

Lens cap removal

1/2.3"

14 Megapixels

4384×3288

1080p30 /1080i60/720p60 110° / 85°

Remove lens cap before use and replace it when shooting is complete to protect the camera lens.

Camera Function Buttons

Capture: Press (hold less than 2 seconds) to take a single capture.

Record: Press (hold more than 2 seconds) to begin recording. Press again to stop.

Camera Data Port

Connect the Camera Data Port to a PC using a Micro-USB cable to copy files to a PC.

Figure 18
Figure 19

Photos and videos can only be copied when the flight battery is powered on.

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Camera LED Indicator

Camera LED Indicator lights up after the flight battery is powered on. It provides information on the working status of the camera.

Camera LED Indicator

Green Solid

Slow Green Blink (0.2s on, 1.8s off)

Green Blink(0.1s on, 0.3s off, 0.1s on, 1.8s off) Fast Green Blink (0.1s on, 0.3s off)

Orange Solid

Orange Blink Once (0.2s on, 0.3s off) Orange Blink 3 Times(0.1s on, 0.1s off) Orange Fast Blink (0.1s on, 0.3s off)

Green, Orange (0.2s green, 1.8s orange) Red Solid
Slow Red Blink (0.2s on, 1.8s off) Red Blink Once (0.2s on, 0.3s off) Red Blink 3 Times(0.1s on, 0.1s off) Fast Red Blinks (0.1s on, 0.3s off)
Wi-Fi status
Camera status
Power On; Idle
Idle
Micro-SD card connected to PC Synchronizing
Recording
Taking a single picture.
Taking 3 or 5 photos per shot Firmware Upgrading
Recording
Critical error
CMOS sensor error
Operation failed
Micro-SD card error
Upgrade error

ON
ON
ON
ON
ON
ON
ON
ON
ON

ON Always use original 9-inch propellers, classified by the
/ / /
/ / / / /
OFF OFF OFF
OFF OFF OFF OFF OFF
Fast Green, Orange and Red Blink (0.1s on, 0.3s off)
/
color of each central nut.

4 Attaching the Propellers

4.1 Introduction Propellers Diagram Assembly Location
Fastening/ Un-fastening Instructions

4.2 Assembly
Grey Nut (9450)
Attach to motor without black dot.
Lock: Tighten propeller in this direction. Unlock: Loosen propeller in this direction.
Black Nut (9450 R)
Attach to motor with black dot.
OFF ON ON ON OFF
OFF
Overheated Camera
(1) (Figure 20) Remove warning cards from motors after you have read them.
(2) (Figure 21) Spin grey marked propellers clockwise onto unmarked motors and black marked propellers anti-clockwise for black marked motors.
Figure 20 Figure 21
Assembly and Use
Attaching the Propellers
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Assembly and Use
Propellers self tighten during flight. DO NOT use thread locker.
Always match marked props with the corresponding motor.
Protective gloves are recommended during propeller assembly and removal.

4.3 Removing the Propellers
(Figure 22) Prevent motor rotation using the included wrench or a hand, then remove propeller according to the un-fastening instructions.

4.4 Notes
(1) Check that propellers and motors are installed correctly and firmly before every flight.
(2) Ensure that all propellers are in good condition before each flight. DO NOT use any ageing, chipped, or broken propellers.
(3) To avoid injury, STAND CLEAR of and DO NOT touch propellers or motors when they are spinning.
(4) ONLY use original DJI propellers for a better and safer flight experience.
Figure 22
For beginner flyers, Phantom 2 Prop Guards are recommended. Contact your authorized dealer or DJI customer service to purchase if necessary.
Figure 23

5 Preparing the Remote Control

The Phantom 2 Vision+ Remote Control is a wireless communication device using the 5.8GHz frequency band. Remote Control and Phantom are paired before delivery.
For upgraded remote control (models: NPVT581, NDJ6 or NRC900), select "Upgrade Version" in Phantom Assistant. For basic remote control (models: PVT581, DJ6 or RC900), select "Basic Version" in Phantom Assistant.
The Remote Control is set to Mode 2 by default. This can be adjusted in the PHANTOM RC Assistant. See Using the PHANTOM RC Assistant (Page 47) for details. You can also adjust the power of your Remote Control according to national regulations. Please refer to Compliance Version Configuration (Page 19).
Compliance Version: The Phantom 2 Vision+ Remote Control is compliant with CE and FCC (see the FCC ID) regulations.
Operating Mode: Mode 1 and Mode 2 refer to different channel mappings.

Mode 1: The right stick controls throttle.
Mode 2: The left stick controls throttle.
The Range Extender and Phone Holder are already mounted on the Remote Control. Twist the Mobile Device Holder to face outwards and fix it in position for mobile device installation.
Large smartphones and tablets are not recommended for the Phone Holder as they do not fit.
Preparing the Remote Control
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5.1 The Remote Control
Assembly and Use
[1] Antenna
[2] Left Dial
[3] Switch S1
[4] Switch S2 (Reserved)
[5] Right Stick: J1, Roll [left & right],
J2, Pitch [front & back]
[6] Left Stick: J3, Throttle [up & down],
J4, Yaw [rotation]
[7] Neck Strap Attachment
[8] Power Switch
[9] Power Indicator
[10] Battery Level Indicator
J4
J1
J3
[1]
[2]
[4]
[6]
[7]
[8]
[9] [11]
[3] J2 [5]
[10]
Preparing the Remote Control

5.2 Power on the Remote Control
Figure 24
Battery Charge & RC Assistant Port (micro-USB port) [12] Training Port (on back)
    [11]
[12]
(1) Set S1 and S2 switches to the upper most position and place all sticks in the mid-point.
(2) Toggle power switch to the right to switch on.
(3) There will be a power on indicator beep. If the remote control is set to be CE compliant, then
there will be one beep, while the FCC compliant version will emit two beeps. The battery level indicator displays the current battery level. The indicator will blink green quickly, indicating the remote control and receiver are linking. Once fully linked, the power indicator will change to a solid green.
If the low voltage warning alert sounds (refer to Remote Control Power LED Status Information (Page 17) for details), please recharge the battery as soon as possible.
Using the incorrect type of charging cable may cause damage. Following long term storage, recharge the battery before use.

5.3 Remote Control Power LED Status Information
Power LED Indicator Sound
— Solid Green None
— Solid Red None
— Solid Yellow None
— Solid Red BB---BB---BB
Quick Red flashing B-B-B...... Slow Green flashing B--B--B......

5.4 Battery Level Indicator
Built-in LiPo Battery: The remote control includes a rechargeable LiPo battery with a capacity of 2000mAh. You can monitor the current battery level using the LED indicators on the front panel of the remote control as the figure shown:
Remote Control Status
Functioning normally.
Charging(remote control is powered off)
Remote control joysticks calibration error, need to be re-calibrate.
Low voltage (from 3.5V-3.53V), recharge the remote control.
Critical low voltage (from 3.45V-3.5V). Recharge the remote control immediately.
Alert will sound after 15 minutes of inactivity. It will stop once you start using the remote control.
The remote control will show a blinking LED and sound an alert when the voltage drops below 3.45V, then automatically power off after 3 seconds. This process will repeat even if you power cycle the remote control. If this low voltage warning occurs during flight, the remote control will automatically power off, causing the aircraft to enter Failsafe mode, which cannot be interrupted (refer to Failsafe Function (Page27) for details). It is strongly recommended that you recharge the battery immediately when the 3.45V-3.5V low voltage warning occurs.

5.5 Antenna Orientation
Keep the antennas pointing skyward, perpendicular to the ground for maximum remote control range during flight.
Battery Level Indicator
25% 50% 75% 100%
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Assembly and Use
Figure 25

5.6 Remote Control Operation

The Remote Control is set to Mode 2 by default.

For maximum range and reliability, Remote Control antenna should point skywards with no obstructions between it and the Phantom. Obstacles may cause Return to Home to trigger. Phone Holder and Range Extender should not block the antenna.

Preparing the Remote Control

18

Stick Neutral/ mid point: Control sticks of the Remote Control are placed at the central position. Move the Stick: The control stick is pushed away from the central position.

Remote Control (Mode 2)

Aircraft

(indicates nose direction)

Operation details

Vertical movements on the left stick control elevation. Push the stick up to ascend and down to descend.

When both sticks are centered the Phantom will hover in place. Push the throttle stick upward beyond the centered (neutral) position to take off. Push the throttle gently to prevent sudden and unexpected elevation.

Horizontal movements on the left stick control the rudder. Push left to rotate counter clock-wise and right for clockwise. If the stick is centered, the Phantom will fly straight.

The more the stick is moved, the faster the Phantom will rotate.

Vertical movements on the right stick control forward and backward pitch.

Push up to fly forward and down to fly backward. The Phantom will hover in place if the stick is centered.

Push the stick further for a larger pitch angle (maximum 35 °) and faster flight.

Horizontal movements on the right stick control left and right pitch.

Push left to fly left and right to fly right. The Phantom will hover in place if the stick is centered.

Push the stick further for a larger pitch angle (maximum 35 °) and faster flight.

Left Dial: Turn the dial to the right, and the camera will shift to point upwards.Turn the dial to the left, and the camera will shift to point downwards. The camera will keep its current position if the dial is static.

The S1 switch is used for compass calibration. Toggle the S1 from position 1 to position 3 and back approximately 5 times to enter into compass calibration mode.

In Naza-M mode, the S1 switch is used to switch between control modes and enter compass calibration.

S2 is used to record a Home point manually. After a Home point has been recorded automatically, flipping S2 from position 1 to position 3 and back 5 times (or more) rapidly will move the Home point to the Phantom's current location. In addition, you can enable Dynamic Home Point feature in DJI VISION App.

In Naza-M working mode, S2 is be used for IOC.

Position 1 Position 2 Position 3

Position 1 Position 2 Position 3

In 'Ready to Fly' mode, the Phantom will hover when all sticks are released.

In 'Ready to Fly (non-GPS)' the Phantom will lock its altitude but will not have horizontal positioning.

5.7 Linking the Remote Control and Receiver

A 5.8G receiver is built in to the Phantom 2 Vision+. Its link button and indicator are located on the underside of the phantom, as shown in Figure 26. The Remote Control and the receiver are paired before delivery. Only use this button if you have replaced your Remote Control or receiver.

Linking Procedures

(1) Power off the Remote Control, power on the aircraft. You will see the link indicator blinking red.

(2) Press the link button with a thin object and hold until the link indicator blinks yellow. Release the link button.

(3) Power on the Remote Control. Link indicator will switch off, showing that a link has been successfully established.

Link Button & Link Indicator

Link Indicator

Link Indicator

Red flashing Yellow flashing

Description

No signal received. Ready to link.

Next Operation

5.8 Compliance Version Configuration

Figure 26

Switch on the Remote Control or perform a link procedure. Switch on the Remote Control.

As power levels vary between regulators, the Phantom Remote Control's power output can be adjusted by twisting the CE/FCC Control Knob (Figure 27) on the back of the Remote Control using a flathead screwdriver. For CE compliance, set the Remote Control to CE with a full counterclockwise turn. For FCC compliance, set the Remote Control to FCC with a full clockwise turn. Be sure to follow relevant local regulations.

Compliance can be configured using the PHANTOM RC Assistant. Select CE compliance version in Assistant to set it, or do the same with FCC compliance version.

Figure 27

CE FCC

Turn the CE/FCC Control Knob gently to avoid damage.

CE compliant devices have an effective remote control range of 400 meters in open spaces due to power limitations.

FCC compliant devices have an effective range of 800 meters in open spaces.

Watch your flight distance as the Phantom 2 Vision+ will enter Failsafe mode (auto-landing or go home and land) if it flies beyond the relevant range limits.

Always follow local laws and regulations.

It is recommended to use a Φ2.4mm flathead screwdriver for adjustments.

There is another potentiometer for reserved use.

Assembly and Use

Preparing the Remote Control

Assembly and Use

6 Preparing the Range Extender

The Phantom 2 Vision+ Range Extender is a wireless communication device that operates within the 2.4 GHz frequency band. It is used to extending the effective range of communication between a Smartphone and the Phantom 2 Vision+. In an open, unobstructed area, the transmission distance

can reach up to 700 meters. This can be reduced by trees, buildings and other sources of the same frequency. Before every flight, it is suggested that you ensure the Range Extender is functioning properly; otherwise communication issues between the mobile device and the Phantom 2 Vision+ may occur.

Each Range Extender has a unique MAC address and network name (SSID), details of which are printed on the label as 'Phantom_XXXXXX'. The 'XXXXXX' represents the last 6 letters or numbers of the MAC address for the Range Extender. This can be renamed in the DJI VISION App.

6.1 Introduction

[1] [5] [2] [6] [3]

[2] POWER Indicator
[3] Locking Screw
[4] Binding Reset Button
[5] Power Switch
[6] Charging Port(Micro-USB slot) [7] Mounting Bracket

SYSTEM Indicator
Green flashing Off
Description
Figure 28
Figure 29
SYSTEM Indicator
Shows Wi-Fi status of the Range Extender.
POWER Indicator
Shows power levels of the Range Extender.
POWER Indicator
Solid green Solid red Solid Yellow
Description
Fully charged.
Low voltage alert, re-charge required. Charging.
[4] [1] SYSTEM Indicator
[7]
Preparing the Range Extender
The Wi-Fi network is functioning normally. The Wi-Fi network is functioning abnormally.
If the power indicator is a solid red light, the Ranger Extender may stop working at any moment. Land and recharge as soon as possible.
Binding Reset Button
When the Binding Reset Button is pressed, it will reset and restart the Range Extender. You will need to bind it with the Phantom 2 Vision+ again to recreate its Wi-Fi network. Failure to do so will cause the DJI VISION App to fail to connect with the camera.

6.2 Using Range Extender

Charging the Range Extender
Charge the Range Extender by connecting the charging port to a power supply device such as a PC or a USB charger using a Micro-USB cable.
Make sure to charge the Range Extender completely before using it for the first time. This takes 3~4 hours depending on USB power output.
Make sure the Range Extender has enough power before each use.

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Powering on the Range Extender
(1) Flick the power switch to the ON position.
(2) Wait for approximately 30 seconds. The Wi-Fi signal indicator will blink green indicating the Range Extender is communicating properly.
(3) Keep the Range Extender facing the aircraft during flight for the best communication link.
Power off the Range Extender after every flight to avoid discharging the battery.
Checking the Battery Level
The battery level of the Range Extender can be checked in the camera page of the DJI VISION App as shown below. When the battery level drops to 20% or lower, the battery level icon will go red as a charging reminder.
battery level above 20%, icon is blue battery level under 20%,icon goes red
Figure 30 Figure 31

6.3 Rename Range Extender SSID

Make your Range Extender SSID easier to remember by changing its name.
Figure 32 Figure 33 Figure 34
(1) Tap "Rename SSID of Range Extender" in the Settings page. Enter a new SSID name (e.g. Phantom_Tom) in the textbox.
(2) Tap and you will be asked to enter the last six characters of your MAC address on the Range Extender to confirm the change. The MAC address can be found on the sticker on your Range Extender. If your MAC address is 60:60:1F:60:41:E7, then enter 6041E7.
(3) Tap "OK" to confirm the change. The Range Extender will automatically restart and the App will return to the settings page. Approximately 30 seconds later, the new network name can be found in the Wi-Fi list of your mobile device. Select and connect the renamed network to use the DJI VISION App.

6.4 Binding the Phantom 2 Vision+ and Range Extender

If the connection between the Phantom 2 Vision+ and the Range Extender fails, or one of them needs to be repaired or replaced, a camera and Range Extender binding will need to be performed through the DJI VISION App.
Binding Reset Button
Assembly and Use
Preparing the Range Extender
Figure 35

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Assembly and Use
(1) Power on the camera and Range Extender.
(2) Approximately 30 seconds later, press the Binding Reset Button on the Range Extender with a pin until the SYSTEM Indicator turns off. The Range Extender will then restart automatically.
(3) Approximately 30 seconds later, the SYSTEM Indicator will start to blink green, indicating that the Range Extender is ready for binding.
(4) Enable Wi-Fi on your mobile device then select "Phantom_XXXXXX" the (SSIDof your Range Extender) from theWi-Fi network list.

(5) Run the DJI VISION App then tap -> Settings -> General -> Binding (Figure 36). Select 'Scan QR Code' to scan
the camera QR code on the bottom of aircraft (Figure 37). Get the camera SSID (E.g. FC200_xxxxxx) and the MAC address (Figure 38). You can also skip the scan and enter the camera MAC address directly (Figure 39). The MAC address can be found on the camera label.
(6) Tap the tick in the top right corner. The Range Extender should automatically restart. Binding is now complete.

Figure 36
Figure 37 Scan the camera QR code on the bottom of aircraft
Figure 39
Downloading and Installing the DJI VISION App
Figure 38

DO NOT push the Binding Reset Button of the Range Extender unless you are ready to rebind the Range Extender and the camera. This will unbind your camera so you must follow the steps above for rebinding.
If both the Phantom 2 Vision+ and the Range Extender are powered on and working normally, you will be able to find the SSID on the Wi-Fi list of your mobile device.
The QR code is located on the bottom cover of the Phantom 2 Vision+. If you cannot find the QR code, please contact DJI customer service and provide your camera serial number (printed on the label of the camera) so they can generate a new QR code for you.
Photographing and saving the QR code is recommended to prevent loss.

7 Downloading and Installing the DJI VISION App
7.1 Download and Install Download DJI VISION App
Download and install the DJI VISION App. Choose one of the download methods below.
Search "DJI VISION" on the App Store then follow instructions for iOS version. Search "DJI VISION" on Google Play then follow instructions for Android version.
iOS6.1 or above Android 4.0 or above

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Supported mobile devices
iOS (iOS6.1 or above) Recommended: iPhone4S, iPhone5, iPhone5S, iPhone5C, iPod Touch4, iPod Touch5; Available but not recommended: iPad3, iPad4, iPad mini, iPad Air.
Android (4.0 or above): Samsung Galaxy S3, S4, Note2, Note3 or mobile devices of similar configuration.
DJI continues to support many mobile devices and any information from users are welcome. Please send any questions or queries to the following mailbox: phantom2vision@dji.com.
The DJI website is regularly updated. Check back often for latest App updates.

7.2 Register and Login
Access the Internet to register and login.
[1] [2]
[1] Register
Figure 40
Figure 41
Figure 42
Tap 'Register' to enter the registration page. Fill in your Email and Password information and then tap new account.
to create a
The DJI account works with all DJI Assistant and Apps.
[2] Login
Tap 'Login' to enter the login page. Fill in your registered Email and Password and then tap
Log in to your account the first time you use the DJI VISION App. Tap "Forgot Password" if you have forgotten your login details.
to login.
[3] Usage tips
Useful tips will display when you enter the welcome page. Tap the screen to display the next tip.
[3]
Figure 43
Assembly and Use
Downloading and Installing the DJI VISION App

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Assembly and Use
Enable the "Tutorial" switch in the Settings page to get hints and tips the first time you use the DJI VISION App.

8 Connecting the Camera
Figure 44
Before flight, always connect your smartphone to the Phantom's Wi-Fi network. This is required for the camera control and FPV.
8.1 Connecting Procedures
Follow these instructions to connect a mobile device to the Phantom 2 Vision+ camera.
(1) Power on the Remote Control and the Range Extender.
(2) Power on the Phantom 2 Vision+.
(3) Enable the Wi-Fi on your mobile device; wait for about 30 seconds, and then select "Phantom_XXXXXX" from theWi-
Fi network list (Figure45).
(4) Run the DJI VISION App on your mobile device. When the Wi-Fi Computer Connection status on the App main menu goes green, the connection is good (Figure46).
(5) Tap the "CAMERA" icon and the DJI VISION App will begin a live camera preview (Figure47). This means everything
Connecting the Camera
is functioning normally.
Enable Wi-Fi
Select Phantom_XXXXXX
Wi-Fi Computer Connection status
Wi-Fi Computer Connection Status Description
Icon
Description
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© 2014 DJI. All Rights Reserved.
Solid green Solid blue Off
Wi-Fi is connected to the Phantom 2 Vision+.

Wi-Fi is connected to another Wi-Fi network, not to the Phantom 2 Vision+. No Wi-Fi connection.
Figure 45
Figure 46
The SSID is unique for each Phantom 2 Vision+ It will appear as Phantom_XXXXXX in your Wi-Fi list. Android users can tap the SSID button on the main page to mobile device Wi-Fi settings directly.
Figure 47

Flight

Once pre-flight preparation is complete, it is recommended to carry out the tasks in the Phantom Pilot Training Guide to prepare for more complex flight maneuvers and learn to fly safely. Ensure that all flights are carried out in a suitable location.

Flight Environment Requirements

(1) Do not use the aircraft in severe weather conditions. These include wind speed exceeding category 4, snow, rain and smog.
(2) Fly in open fields as high buildings or steel structures may affect the accuracy of the onboard compass.
(3) Keep the Phantom away from obstacles, crowds, high voltage power lines, trees or bodies of water when in flight. (4) Reduce the chance of electromagnetic interference by not flying in areas with high levels of electromagnetism,
including base stations or radio transmission towers.
(5) The Phantom cannot operate within the polar areas.
(6) Do not fly the aircraft within no-fly zones specified by local laws and regulations.

Preflight Checklist

(1) Remote Control, smart battery, Range Extender and smartphone are fully charged. (2) Propellers are mounted correctly.
(3) Gimbal clamp has been removed.
(4) Damping absorbers are in good condition, not broken or worn.
(5) Anti-drop kits have been mounted correctly. (6) Camera lens cap has been removed.
(7) Micro-SD card has been inserted if necessary. (8) Gimbal is functioning as normal.
(9) Motors can start and are functioning as normal. (10) DJI VISION App can connect to the camera.

1 Calibrating the Compass

IMPORTANT: Make sure to calibrate the compass in every new flight location. The compass is very sensitive to electromagnetic interference, which can cause abnormal compass data leading to poor flight performance or even flight failure. Regular calibration is required for optimum performance.
DO NOT calibrate your compass where there is a chance of strong magnetic interference, such as magnetite, parking structures, and steel reinforcements underground.
DO NOT carry ferromagnetic materials with you during calibration such as keys or cellular phones.
DO NOT calibrate beside massive metal objects.

1.1 Calibration Procedures

Choose an open space to carry out the following procedures. Watch the Phantom 2 Vision+ quick start video for more details.
360°Rotate the aircraft horizontally
Quickly flip the switch S1 Position-1
Position-3
Position-1->Position-3->Position1 Flip 5 times or above, or tap "Compass Calibration" in DJI VISION APP
360°Rotate the aircraft vertically (Nose downward)
Start cali.
LED Flight Indicator
LED Flight Indicator Solid Green
LED Flight Indicator Solid Yellow
Start horizontal calibration
Normal LED
Succeed
Red, Yellow flashing in turn
Start vertical calibration
Position-1
Fail
Position-3
Positon-1->Positon-3 ->Positon1 Flip once
Re-calibrate
Figure 48
Calibrating the Compass
Flight
If compass calibration is needed before flight, a prompt will appear on the DJI VISON App's camera page. It will disappear after successful calibration.

1.2 When to Recalibrate

(1) When compass data is abnormal, the rear LED flight indicator will blink red and yellow.
(2) Flying in different location to last flight.
(3) Mechanical structure of the Phantom has changed, i.e. changed mounting position of the compass. (4) Severe drifting occurs in flight, i.e. Phantom does not fly in straight lines.

2 Starting/Stopping the Motors

2.1 Starting Motors

A Combination Stick Command (CSC) is used to start the motors instead of simply pushing the stick up. Push both sticks to their bottom corners to start the motors. Once the motors have spun up, release both sticks simultaneously.

2.2 Stopping Motors

Figure 49
There are two methods to stop the motors.
Method 1: When the Phantom has landed, push the throttle down, then conduct CSC. Motors will stop immediately.
Release both sticks once motors stop.
Method 2: When the aircraft has landed, push the throttle down and hold. Motors will stop after 3 seconds.
Starting/Stopping the Motors / Flight Test
[1] [2]
Figure 50
Figure 51
Do not execute CSC during normal flight. This will stop the motors and cause the aircraft to drop without control.

Conduct the CSC as neatly as you can. Release the sticks once motors start/stop.

Pull down the throttle stick to descend. The stick will lock into place and the aircraft will descend steadily. Push the throttle stick upward to release throttle lock.

3 Flight Test

3.1 Take off/Landing Procedures

(1) Place the Phantom 2 Vision+ on open flat ground with battery indicators facing towards you.

(2) Power on the Remote Control and Range Extender, then the Smart Flight Battery.

(3) Launch the DJI VISION App and start bind it with your smartphone then enter the camera preview page.

(4) Wait until the Rear LED Flight Indicator blinks green. This means it has initialized and is Ready to Fly. If it flashes yellow, it is in Ready to Fly (non-GPS) mode and will require more careful flight. Execute the CSC command to start motors.

(5) Push the throttle up slowly to take off. Refer to Remote Control Operation (Page 18) for more details.

(6) Shoot photos and videos using the DJI VISION App. Refer to DJI VISION App Usage (Page 32) for more details.

(7) To land, hover over a level surface and gently pull down on the throttle gently to descend.

(8) After landing, execute the CSC command or hold the throttle at its lowest position for 3 seconds or more until the motors stop.

(9) Turn off the smart battery, Range Extender and Remote Control.

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When the Rear LED Flight Indicator blinks yellow rapidly during flight, the aircraft has entered Failsafe mode. Refer to Failsafe Function(Page 27) for details.

A low battery level warning is indicated by the Rear LED Flight Indicator blinking red slowly or rapidly during flight. Refer to the Low Battery Level Warning Function(Page 28) for details.

View tutorials about flight for more flight information:www.dji.com/phantom2visionplus/training.

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.

3.2 Video Suggestions and Tips

(1) Work through the check list before each flight.

(2) Set the gimbal working mode to Stabilized.

(3) Aim to shoot when flying in Ready to Fly only.

(4) Always fly in good weather, such as sunny or windless days.

(5) Change camera settings to suit you. These include FOV, photo format and exposure compensation. (6) Take flight tests to establish flight routes and scenes.

(7) Push the sticks gently to make aircraft movements stable and smooth.

4 Failsafe Function

The Phantom will enter Failsafe mode when its connection to the Remote Control is lost. The Flight Control System will automatically control the aircraft to return to home and land to prevent injury or damage.

Home Point: When the Phantom enters 'Ready to Fly' from the 'Ready to Fly status (non-GPS)', the GPS coordinates will be recorded and set as the home point.

When Remote Control signal is lost, the aircraft will return to the recorded home point coordinates and land. Home point coordinates are used to calculate the horizontal distance of the aircraft (shown as "Distance" on the GUI of the DJI VISION App).

After successfully record the home point, rear LED flight indicators blink fast green.

Dynamic Home Point: The Home point will be reset to position of the mobile device at specific time intervals.

Enable dynamic home point in DJI Vision app or Phantom 2 Assistant.

Dynamic home point is only available to the GPS-enabled mobile device. Turn on GPS and data service to obtain higher accuracy of the mobile device position.

Dynamic home point is useful in situations when you are in motion and require a Home point that is different from the takeoff point.

4.1 When Will Failsafe Activate?

(1) The Remote Control is powered off.

(2) The Phantom has flown out of effective remote control range.

(3) The signal between the Remote Control and the Phantom has been blocked. (4) There is interference causing a signal problem with the Remote Control.

4.2 Failsafe Procedure

Initiating the Failsafe mode from different flying statuses will results in different landing processes.

Ready to Fly(non-GPS)‑ Automatic landing

The Flight Control System will keep the aircraft level during descent and landing. It may be drift 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.

1 Record Home Point

LED Flight Indicator

Yellow flashing Green flashing

4 Signal lost lasts 3s, begin to go home

2 Flying

LED Flight Indicator Green flashing 5 Fly back to home point

3 Remote Control signal lost

LED Flight Indicator Yellow flashing 6 Landing after hovering 15s

LED Flight Indicator

Yellow flashing

Height over home point>20m

Elevate to 20m

20m

Height over home point<=20m

LED Flight Indicator Yellow flashing

LED Flight Indicator

Yellow flashing

Figure 52

27

Flight

Failsafe Function

Flight

To ensure the aircraft successful return to home after Failsafe activation, aim to only fly in Ready to Fly mode. The Phantom will automatically descend during the Failsafe process if there are less than 6 GPS satellites detected for more than 20 seconds.

Aircraft cannot navigate around vertical obstacles on its return home course during Failsafe. However, you can set return home altitude value in Phantom Assistant to avoid hitting vertical obstacles through DJI Phantom Assistant.

Quickly flipping the S2 switch of the Remote Control from top to bottom 5 times or more will reset the current aircraft position as a new home point. Rear LED flight indicators will blink green rapidly when successful.

Failsafe on the DJI VISION App

The DJI VISION App will provide information during Failsafe.

Figure 53

4.3 Regaining Control During Failsafe Procedures

Figure 54

Position-2

Position of Switch S1 How to regain control

Position-1

When the S1 switch is switched to Position-1, toggle the S1 switch to any other position once to regain control. If the Remote Control signal is recovered, control is returned to the pilot.

Position-3

5 Low Battery Level Warning Function

If the DJI smart battery is depleted to a point that may affect the safe return of the aircraft, the low battery level warning notifies users to take action. Users are advised to land the aircraft immediately when they observe these warnings. The thresholds for these warnings are automatically determined based on the current aircraft altitude and its distance from the Home point. Details of the battery level warning are listed below:

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Critical Low battery level warning(Red)

Sufficient battery level(Green)

Estimated remaining flight time

Current level warning(Yellow) battery level

Low battery

Battery level indicator

Figure 55

Regain control as soon as signal is recovered.

Low Battery Level Warning Function

Battery Level Warning

Low battery level warning

Fly the Phantom 2 Vision+ back and land it as soon as possible, then stop the motors and replace the battery.

Remark

Rear LED Flight Indicator

DJI VISION App

Flight Instructions

Flight

Sufficient battery level

Sufficient battery level

Green LED blinks slowly

No message prompts

Operating normally, no specific action needed

The battery power is low. Please land the aircraft.

Red LED blinks slowly.

When "Go-Home" is selected in the Phantom Assistant, this message will appear:

Go Home In 10 Seconds

If you cancel, there may not be enough battery power to return to the home point!

Cancel

Go Home

Tap "Go-home" to have the aircraft return to the Home point and land automatically, or "Cancel" to resume normal flight.

If no action is taken, the aircraft will automatically go home and land after 10 seconds.

Critical Low battery level warning

Estimated remaining flight time

N/A

The aircraft must land immediately.

Red LED blinks quickly.

The DJI Vision App screen will flash red and aircraft starts to descend.

The Phantom 2 Vision+ will begin to descend and land automatically.

Estimated remaining flight based on current battery level.

N/A

N/A

Color zones on the battery level indicator   reflect estimated remaining flight time and are adjusted automatically, according to the aircraft's current status.

When the critical battery level warning activates and the aircraft is descending to land automatically, you may push the throttle upward to hover the aircraft and navigate it to a more appropriate location for landing.

When these warnings are triggered, please bring the aircraft back to the Home point or land to avoid losing power during flight.

Low Battery Level Warning on the DJI VISION App

Battery level warnings will show on the camera page of the DJI VISION App when the battery level is low. (1) A red light will flash along the edges of the app screen.

(2) Audiblealarm.Makesuresoundisturnedonandvolumeisturneduponyourmobiledevice.

(3) Theaircraftbatteryiconwillturnred.

The aircraft battery icon will turn red

Figure 56

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Low Battery Level Warning Function

Ready to Fly

Green flashing

Max Height
Flight height must be under the set height.
Warning: Height limit reached.
None.
Ready to Fly(non-GPS)
Yellow flashing
Max Height
Flight height restricted to 120m and under.
Warning: Height limit reached.
None.
Flight

6 Flight Limits

All unmanned aerial vehicle (UAV) operators should abide by all regulations from such organizations as the ICAO (International Civil Aviation Organization) and their own national 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 and No Fly Zones.

In Ready to Fly mode, height, distance limits and No Fly Zones work together to manage flight. In Ready to Fly (non-GPS) status, only height limits work and flights cannot go higher than 120m.

Default parameters in Assistant are compliant within the definitions of class G ruled by ICAO. (Refer to Airspace Definition to get more details). As each country has its own rules, make sure to configure these parameters to comply with these rules before flying.

6.1 Max Height & Radius Limits

Max Height & Radius limits flying height and distance. Configuration can be done in the Phantom 2 Vision+ Assistant (Figure 57). Once complete, your Phantom will fly in a restricted cylinder (Figure 58).

Max Height
Max Radius
Home Point
Height of aircraft when powered on
Figure 57
Limits
Flight distance must be within the max radius.
Flight Limits
No limits
Figure 58
Max Radius
Max Radius
DJI VISION App
Warning: Distance limit reached.
DJI VISION App
Rear LED flight indicator
Rapid red flashing when close to the max radius limit.
Rear LED flight indicator
If you fly out of the limit, you can still control the Phantom, but cannot fly it further.
If the Phantom flies out of the max radius in Ready to Fly (non-GPS) mode, it will fly back within range automatically.

6.2 Flight Restriction of Restricted Areas

Restricted areas include airports worldwide. All restricted areas are listed on the DJI official website at http://www.dji. com/fly-safe/category-mc. Restricted areas are divided into category A and category B. Category A areas cover major international airport such as LAX and Heathrow, while category B areas includes smaller airports.

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Flight Limits
Category A Safety Zone
(1) The category A "safety zone" is comprised of a small "no-fly zone" and a range of "restricted-altitude zones". Flight is prevented in the "no-fly zone" but can continue with height restrictions in the restricted-altitude zone.
(2) 1.5 miles (2.4 km) around a designated safety zone is a no-fly zone, inside which takeoff is prevented.
(3) 1.5 miles (2.4 km) to 5 miles (8 km) around restricted areas are altitude restricted, with maximum altitude going from
35 feet (10.5 m) at 1.5 miles (2.4 km) to 400 feet (120 m) at 5 miles (8 km).
(4) A "warning zone" has been set around the safety zone. When you fly within 320 feet (100m) of the safety zone, a warning message will appear on the DJI Vision app.
Category B Safety Zone
(1) Category B "safety zone" is comprised of a "no-fly zone" and a "warning zone".
(2) 0.6 miles (1 km) around the safety zone is a designated "no-fly zone".
(3) A "warning zone" has been set around the safety zone. When you fly within 0.6 miles (1Km) of this zone, a warning will appear on the DJI Vision app.
Ready to Fly
Zone No-fly Zone
Restricted-altitude flight zone
Warning zone Free zone
DJI VISION App Notification
Warning: You are in a No-fly zone. Take off prohibited.
Warning: You are in a No-fly zone, automatic landing has begun. (If you are within 1.5 mile radius)
Warning: You are in a restricted zone. Descending to safe altitude. (If you are between the range of 1.5 mile and 5 mile radius) Warning: You are in a restricted zone. Max flight height restricted to between 10.5m and 120m. Fly Cautiously.
Warning: You are approaching a restricted zone, Fly Cautiously.
Rear LED Flight Indicator
Red flashing
Figure 59:Category A
Green flashing
Restriction
Motors will not start.
If the Phantom enters the restricted area in Ready to Fly (non-GPS) mode but Ready to Fly mode activates, the Phantom will automatically descend to land then stop its motors after landing.

If the Phantom enters a restricted area in Ready to Fly (non-GPS) mode and Ready to Fly mode activates, it will descend to a safe altitude and hover 15 feet below the safe altitude.

No flight restriction applies, but there will be warning message.

No restrictions.

Figure 60: Category B

None. 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 (Page28).

When flying in the safety zone, 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.

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.

Flight
Flight Limits
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
×
×
×
Icons
Description
Album
Tap to enter album
News Settings
Tap to enter DJI news Tap to enter App settings
DJI VISION App Usage

6.3 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.

6.4 Disclaimer

Please ensure that you are 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, violating or disregarding other applicable local laws, administrative rules and social habits thereof.

DJI VISION App Usage

The DJI VISION App controls the Phantom 2 Vision+ camera including capture, recording, settings and pitch angle. It also displays essential flight information including flight parameters and battery level.

1 DJI VISION App Main Menu

After logging in you will see the VISION App home screen. This shows current Wi-Fi connection status and the four main features of the App.
Figure 61
Camera Tap to enter camera preview
Checklist Tap to enter preflight checklist.
When using the camera and the SD card album (Page 37), connect your mobile device to the Phantom 2 Vision+ Wi-Fi network.
Internet access is required for sharing photos, videos and reading DJI news. If you receive a phone call during a flight, the live camera preview screen may be interrupted. It's recommended to ignore the call and pay attention to your flight.

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DJI VISION App Main Menu

2 Camera Page

[6] [1]
[2]
[3] [4]
[5] [7] [8] [9] [10]
[11]
[12] [13] [14]
-Return to the preview page

[2] Camera Pitch Control

-Pitch Control switch is white return to normal.
Normal Mode
Tap up arrow camera pitch.
Accelerometer Sensor Mode
tap once to highlight it to pitch camera upwards and down arrow
Gimbal pitch control (Normal Mode)
Figure 63
and enter Accelerometer Sensor Mode. Tap again to to pitch downwards. Green slider indicates current
Gimbal pitch movement
Figure 64
Figure 62
[1] Return [2] Camera Pitch Control [3] Flight Attitude and Radar Function [4] Flight Parameters [5] Wi-Fi Signal Strength [6] Flight Battery Level [7] Aircraft GPS Status [8] Micro-SD Card Status [9] Range Extender Battery Level [10] Remaining Shots [11] Shutter Button [12] Video Recording Button [13] Camera Settings [14] Hide or Show Flight Parameters

[1] Return

The gimbal pitch movement is controlled by moving your mobile device. Pitch forward to pitch camera down and backward to pitch camera up.
Gimbal pitch control (Accelerometer Sensor Mode) Gimbal pitch movement
Figure 65 Figure 66 Figure 67
In Accelerometer Sensor Mode, the pitch angle indicator will show a grey area. When the green pitch indicator is inside the grey area, the camera will move according to pitch gestures. When the indicator reaches the boundary of the grey area, pitch gestures will control the camera's pitch speed at a constant rate.
DJI VISION App Usage
Camera Page

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DJI VISION App Usage

[3] Flight Attitude and Radar Function

Flight attitude is indicated by the flight attitude icon.
(1) The red arrow shows which direction the Phantom 2 Vision+ is facing.
(2) Light blue and dark blue areas indicate pitch.
(3) Pitching of the boundary between light blue and dark blue area shows roll angle.
(4) An orange circle around the radar indicates that the dynamic home point is not available.
A green circle around the radar indicates that the dynamic home point is available and a new home point has been set.
Figure 68
Tap flight attitude icon to turn on the radar function. Home in the center of the radar and the red icon indicates the Phantom 2 Vision+'s current heading, direction, and approximate distance from home. Tap flight attitude icon again to disable the radar.The current longitude and latitude of the aircraft is displayed on the bottom of the radar.
Aircraft Position
Home Point Mobile Device Position
113.94717E
200M 400M 600M 800M
22.54053N
113.94717E
200M
400M 600M 800M
22.54053N
Longitude & Latitude
Figure 69 Figure 70
Distance
By default, the center of the radar indicates the home point recorded by the Phantom 2 Vision+. Tap the center of the radar to switch the center to your mobile device's current location.
If your mobile device contains a compass, the top portion of the Radar is the direction you are pointing. If not, the radar will be oriented due north. Distance units are metric in Figure 69 and Figure 70. Users can switch the unit to imperial in the settings page.

[4] Flight Parameters

Tap to set return home (RTH) altitude. Distance: Horizontal distance from home point. Altitude: Vertical distance from home point. Speed: Horizontal flying speed.
Distance value will show as N/A if the Phantom 2 Vision+ is not in "Ready to Fly" mode.

[5] Wi-Fi Signal Intensity

Indicates camera is connected to your mobile device and Wi-Fi is working normally.
The connection between the camera and mobile device may fail if Wi-Fi signal strength is low. Refer to Phantom 2 Vision+ CONNECTION BROKEN for more information.

[6] Flight Battery Level

Show current flight battery level. When battery level is low and the battery icon turns red it is recommended to fly the aircraft back and land it as soon as possible. Please refer to Low Battery Level Warning Function (Page 28) to get more details.

[7] Aircraft GPS Status
GPS status icon display the number of satellites found by the aircraft. The icon is highlighted when more than 6 satellites are found, allow the Phantom to fly in "Ready to Fly" mode.

[8] Micro-SD Card Status
Displays Micro-SD Card Status. Icon is highlighted when a valid Micro-SD card is inserted. If there is no Micro-SD card present, it is grayed out.

[9] Range Extender Battery Level
Shows current battery level of the Range Extender. Refer to Checking the Battery Level (Page 21) for more details.

[10] Remaining Shots
Displays estimated shots remaining, based on the current photo size setting and storage capacity of the Micro-SD card. This shows '0' if:
(1) Micro-SD card is not inserted.
(2) Micro-SD card is full.

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Go-Home Setting Current Altitude
New Altitude
Set New Altitude
(3) Micro-SD card is damaged.
(4) Connection between the DJI VISION App and camera is broken.

[11] Shutter Button
Tap to take photos.
Single capture: press once for a single capture.
Continuous capture: press once for 3 or 5 captures.
Timed capture: press once to begin a timed capture, press again to stop.
Shutter button is disabled during video recording.
Capture modes can be reconfigured in camera settings; refer to the Camera Settings (Page35).

[12] Video Recording Button
Start and stop video recording. Tap once to start recording. A red dot will blink to indicate recording is in progress and a time code will appear in the top right corner of the preview screen. Press again to stop recording.

[13] Camera Settings
Tap to open the camera settings menu, refer to Camera Settings (Page 35).

[14] Hide or Show Flight Parameters
Tap to hide flight parameters. Tap again to show.
Figure 72

3 Camera Settings
[1]
[2]
[3]
[4] [9] [5] [10] [6] [11] [7]
Figure 74
Figure 71
[1] Capture Mode [2] Photo Size [3] Video Resolution [4] Photo Format [5]ISO [6] White Balance [7] Exposure Metering [8] Exposure Compensation [9] Sharpness [10] Anti-flicker [11] Restore Defaults [12] Format Micro-SD Card

[1] Capture Mode
[8]
[12]
Figure 75
Single capture.
3 captures.
5 captures.
Configurable timed capture:
a) Interval between shots (3~60 s)
b) Number of shots
(2~254, or number of picture is subject to the capacity of the memory card.)
DJI VISION App Usage
Camera Settings
Figure 73

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DJI VISION App Usage
Capture Button will change according to the mode selected , , ,

[2] Photo Size
[3] Video Resolution

Large: 4384 x 3288, 4:3, 14.4MP
Medium: 4384 x 2922, 3:2, 12.8MP

Small: 4384 x 2466, 16:9, 10.8MP
1920x1080 60i,
16 : 9
1920x1080 30p,
16 : 9
1920x1080 25p,
16 : 9
1280x960 30p,
4:3
1280x960 25p,
4:3

1280x720 60p,
16 : 9
1280x720 30p,
16 : 9
640x480 30p,
4 : 3(VGA)

Three Field of View (FOV) options are supported when shooting in 1920x1080 60i, 1920x1080 30p and 1920x1080 25p: Medium (110°) and Narrow (85°).

[4] Photo Format
RAW can be edited using the most recent versions of Adobe Camera Raw for Photoshop and Adobe Lightroom.

[5] Selectable ISO [6] White Balance

[7] Exposure Metering
Center: The meter concentrates most on the center of the scene.
Average: Averages out the light levels for the entire image. This mode is used when the scene has no significant light difference.
Spot: Measures a small area in the center of the scene. This mode is used in a high contrast scene where the subject must be accurately exposed.

JPEG

RAW

The Phantom 2 Vision+ camera shoots in JPEG and RAW file formats simultaneously when this option is selected. See the following table for detailed specifications. JPEG photo size: 4384×3288, 4384×2922, 4384×2466
RAWphoto size: 4384×3288, 4384×2920, 4384×2464

AUTO
100
200
400
AWB (auto white balance)
Sunny
Cloudy
Incandescent lamp
Center
Average
Spot

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[8] Exposure Compensation

[9] Sharpness

[11] Restore Defaults
-2.0(EV) -1.7(EV) -1.3(EV) -1.0(EV) -0.7(EV) -0.3(EV) 0(EV)
Standard Hard Soft
2.0(EV) 1.7(EV) 1.3(EV) 1.0(EV) 0.7(EV) 0.3(EV)

[10] Anti-flicker
Restores all default camera settings. Flight battery restart is needed to allow restoration to take effect.

[12] Format Micro-SD Card
Format the Micro-SD card. All data stored in the Micro-SD card will be lost after formatting. Remember to backup before formatting.

4 Album Page
The DJI VISION App has an SD Card album and a Mobile Device Photo Album. Images and videos on the SD Card album can be synchronized to the Mobile Device Photo Album.
In the DJI VISION App, tap to enter into the SD Card album and tap to enter into Mobile Device Photo Album.
SD CARD Album
Mobile Device Photo Album
Figure 76
SD Card album is accessible when the mobile device is connected to Phantom 2 Vision+ Wi-Fi.

4.1 SD Card Album [1] Pictures stored in the camera are presented using Thumbnails.

Tap the corresponding thumbnail to view the picture.
[1] Photos and videos are listed and grouped by date.
[2] All photos and videos that have been synced to your mobile
device are marked with .
[3] Tap any thumbnail for single view mode. Tap a Photo thumbnail
that hasn't been synchronized to the mobile device to view the photo. Swipe left or right to view the previous or next photo. Tap on a video thumbnail to play it and view the video length. A progress bar will appear at the bottom of the screen. Tap
to enter single synchronization mode to synchronize a [2] single photo or video, or to synchronize and play a video at the same time.
[4] [3]
DJI VISION App Usage
Figure 77
Anti-flicker 50Hz 60Hz
Album Page
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DJI VISION App Usage
Figure 82
38 © 2014 DJI. All Rights Reserved.

Figure 78 Figure 79
[4] Tap the button to enter multiple synchronization mode (as shown in the following diagram). Tap thumbnails to select photos or videos to synchronize to your mobile device (selected thumbnails are marked with a tick). Select one or more groups to be synchronized by checking the box before the group, then tap to start synchronizing. During the synchronization process, users can tap to cancel synchronization. Photos and videos that have been synchronized to the mobile device will remain.

Some mobile devices cannot support the synchronization of 1080i60 video files.

Select a group
Select a single photo or video
[5]
Figure 80
Figure 81
[5] Tap "Cancel" or "Finished" to exit multiple synchronization mode and return to the SD Card page.
Connect camera data port to a PC via a Micro-USB cable to copy photos or videos on the SD card album from the Micro-SD card to the PC conveniently.

4.2 Mobile Device Photo Album

[2] [3]
[1] [4]
Figure 83
Geo-tagged locations
[1] Browse all synchronized photos and videos in the album. Tap to view selected photos or videos.
[2] Photos and videos are displayed using thumbnails and sorted by capture time. [3] Pictures and videos are sorted by captured/recorded geo-tagged locations.
Internet access is required for map downloads.

DJI VISION App Usage
[4] Tap any thumbnail for single view; you can slide left or right to view the previous or next photo. Tap a video thumbnail to play a single video.
[5] Tap

Figure 84
to share your photos and videos to social networks.
Access to the Internet is required for photo and video sharing.

Figure 85
5 News Page
View the latest DJI news. (Internet access is required.)
News Page / Settings Page
6 Settings Page
[1] [2] [3] [4]
[5]
[6]
[7]
[8]
[9] Dynamic Home Point
[10] [11]
[12]
Current RTH Altitude Battery History Info
Figure 88
Figure 89
Figure 90
Figure 86
Figure 87
N/A [13] [14] [15]
When FPV(First Person Vision) mode is
enabled, gimbal roll motion will synchronize [16]
with the aircraft for a real time FPV experience. When FPV mode is disabled, the gimbal will stabilize across three axes for smooth aerial creativity. This mode is only available on the Phantom 2 Vision+.
GENERAL
[17] [18] [19]
[20] [21] [22]
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DJI VISION App Usage
[1] Toolbar Auto Hide
Slide the switch from left to right to enable this function. Toolbar will auto hide on the camera page.
Figure 91: Toolbar Auto Hide Disabled Figure 92: Toolbar Auto Hide Enabled
[2] When Connection Lost
Figure 93
[3] Camera Settings
Stop Recording:
Enabled: Stop recording if the Wi-Fi connection between the mobile device and the camera breaks while the camera is recording.
Disabled: Keeps recording if the Wi-Fi connection between the mobile device and the camera breaks while the camera is recording.
Select the state the camera will enter in the event of a Wi-Fi Connection break between the mobile device and the camera. Use this function to ensure you can continue don't miss out on a shot.
iOS users will see an enabled item display in the camera settings toolbar and disabled items will be hidden. This feature is not available on Android.
Settings Page
Figure 94
[4] Preview Quality
Figure 96
Figure 95
40 © 2014 DJI. All Rights Reserved.
3 items displayed by default
High: 640 x 480@30fps
Medium: 640 x 480@15fps
Medium: 320 x 240@30fps
Low: 320 x 240@15fps (Recommended when there is a lot of interference.)
Enable or disable auto go home feature when battery is low.
[9] Dynamic Home Point

When activated, the Home point will be reset to your current position at specific time intervals. The aircraft will return to the latest Home point as required.

[10] Current RTH Altitude
DJI VISION App Usage

[5] Parameter Unit
Select imperial or metric units of measurement.

[6] Ground Station
Slide to the right to enable ground station feature.

[7] Compass Calibration
Tap to calibrate the compass. Do not calibrate the compass during flight.

[8] Low Battery Auto Go Home

[13] Rotation Lock
The user interface of the DJI VISION App will rotate if rotation lock is enabled (for iOS device only).

[14] Battery Low Warning
If enabled, an alarm will sound when the battery level is too low.
We recommended adjusting the mobile device volume to the highest level.

[15] Tutorial
Hints and Tips

[16] Clear News Cache
Tap to flush news cache.

[17] Binding
In the event that camera and Range Extender binding is lost or an item has been repaired or replaced, binding must be performed using the DJI VISION App. Refer to Binding the Phantom 2 Vision+ and Range Extender (Page 21) for details.

[18] Rename SSID of Range Extender
Tap to rename the SSID of the Range Extender. Refer to Rename Range Extender SSID (Page 21) for details.
Figure 98
Default RTH altitude set to 20m. Raising the RTH altitude above 120m is not recommended.

[11] Battery History Info
Show the battery history warning records.

[12] FPV Mode
Switched on, the gimbal will work in FPV mode. Switched off, the gimbal will work in Stabilize mode.

[19] Find My PHANTOM 2 VISION
My location
Phantom 2 Vision's location

[20] Account
Figure 97
Tap to see user account information.

[21] Rate
Tap to rate the DJI VISION App. Internet access required.
Android App does not include rating.

[22] About
Tap to see the current version of the DJI VISION App and contact information.
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Settings Page
DJI VISION App Usage

7 Ground Station
The DJI Vision app features an integrated ground station function. Using it you can create flight missions by placing waypoints and setting waypoint altitude and overall speed. When flight plan has been created, simply tap "GO" and your aircraft will execute the flight mission automatically. You may also abort the flight mission and bring aircraft home by activating "GoHome" feature.
Upgrade Phantom firmware to the latest version to enable ground station feature. Refer to "Firmware Upgrade of the Phantom 2 Vision+" (P46) for more information about how to upgrade the firmware.

7.1 Ground Station GUI
[9]
[10]
[1]
[2]
[3] [4]
[5] [6]
[11] [12] [13] [14]
[15]
[16] [17]

[1] MODE Modes include
Attitude and Radar display. Refer to [3] in "Using the DJI Vision app" for details.

[8] Flight Parameters
Flight information display. Refer to [4] in "Using the DJI Vision app" for details.

[9] Back
Return to camera GUI.

[10] Home Point Locator Locate your Home point.

[11] Orientation Lock
Unlock to sync map orientation with aircraft movement.

[12] Map View
Select map view from standard, hybrid or satellite.

[13] Waypoint
Tap each waypoint to set altitude.

[14] Delete
Delete current waypoint.
[15] Go Home
Abort mission, return home and land.
[16] Done
Hit "Done" then tap "GO" to begin mission.
[17] Flight Area
The aircraft can fly in this area and return to the home point with the current battery level. This area is dependent on the current state of the aircraft and will be refreshed at specific time intervals.
Hover: Hovering
Waypoint: Mission in progress GoHome: Returning to home point Take off: Taking off
Landing: Landing
GPS: GPS flight
Atti.: Atti. flight
Manual: Manual flight
Ground Station
[2] Approximated Flight Mission Distance
Planned mission distance. To achieve optimum battery performance, max mission distance is 5km(3miles).
[3] Speed
For flight safety concern, only three gears of flight speed are available. Choose from Fast (8m/ s), Mid(4m/s) and Slow (2m/s) for flight speeds. Estimated 10 minutes flight is achievable when the aircraft travels in "Fast" gear.
[4] Wi-Fi Signal Strength
Wi-Fi signal strength display. Refer to [5] in "Using the DJI Vision App" for details.
[5] Battery Level
Battery level display. Refer to [6] in "Using the DJI Vision app" for details.
[6] GPS
Number of satellites connected. Refer to [7] in "Using the DJI Vision app" for details.
[7] Flight Attitude and Radar
42
[7]
[8]
Figure 99
7.2 Using Ground Station
Step 1 Launching Ground Station:
Enable ground station in the Settings section of the DJI Vision app. A disclaimer for Ground Station will appear. Read this thoroughly before using Ground Station.
Figure 100
Ensure your mobile device has access to the Internet. Due to the map data required, Wi-Fi connection is recommended. Internet access is required to cache the ground station map, if Wi-Fi is unavailable, mobile data service is required. Open the DJI Vision app camera GUI and swipe left to launch ground station(see Figure 101). DJI Vision app cannot connect to your aircraft while it is accessing the Internet. Hence, you may prompt with the warning message such as "Connection to Phantom Failed". This message will not appear when your aircraft is re-connected to DJI Vision app. Map data of your current location will load. You can then drag the map to cache nearby areas for future use(see Figure 102).
ft ft
Figure 101 Figure 102
Step 2 Setting a Waypoint:
Disconnect from the Internet and connect the DJI Vision app to your aircraft. Check that remote control S1 switch is in
position (position-1) and the upper left corner in ground station display and wait for the aircraft to enter "Ready- to-Fly" mode (LED indicator blinking green) before swiping left into ground station. Tap on the map to place a waypoint. You can place up to 16 waypoints including the Home point. Waypoints cannot be placed beyond 500m from the Home point or inside No Waypoint Areas.
Figure 103 Figure 104
DJI VISION App Usage
Ground Station
43
DJI VISION App Usage
A circle on the map, as shown in Figure 104, indicates a restricted, No Waypoint area. Waypoints cannot be placed in this area. For more information, refer to "6.2 Flight Restriction of Restricted Areas (P30)".
To achieve the optimal video transmission quality, the aircraft is set to operate within a 500m-radius area from Home point.
Tap on a waypoint to open a waypoint properties window. Slide the white dot right to adjust waypoint altitude. The default altitude is set to 98 feet (30 m) and can be adjusted from 0 to 650 feet (200 m). Tap "OK" to save waypoint
settings. To delete current waypoint, tap
. Modify longitude and latitude value using the input box.
waypoint1
Longitude Latitude
113.94984 22.54074
Height
Figure 105
Step 3 Preview a Mission:
Tap "Done" to preview the mission when all waypoints are set. A prompt similar to the one below will appear.
This prompt lists all waypoints and their altitudes. The aircraft will fly to each waypoint listed. If there is a difference in altitude between waypoints, the aircraft will adjust its altitude as it flies between points. When ready, tap "GO" to begin mission.
Figure 106
If aircraft is on the ground, the aircraft takes off automatically and ascend 16 feet (5m) then fly to the first waypoint. If aircraft is in the air, the aircraft flies to the first waypoint.
Step 4 Executing Flight Mission
The aircraft flies to each waypoint in numerical order. As it flies, swipe back into the DJI Vision app camera GUI to control camera tilt and capture photos or video. Tap to pause the mission during the flight, and aircraft will then start hovering. Tap to resume mission. If you wish to regain control of the aircraft, toggle the S1 switch on remote control from (Position-1) to either (Position-2) or (Position-3) to discontinue the current mission.
Step 5 Landing
When all waypoints have been visited, the aircraft will return to its Home point and hover. Regain control of the aircraft and land it manually. You may also tap button to initiate "Go Home" procedure. Aircraft will abort current mission, return to Home point and auto land.

Aircraft reacts differently to the "GO" command:

Figure 107

PC / MAC Assistant

For better use of the Phantom 2 Vision+, Phantom 2 Vision+ Assistant and Phantom RC Assistant are required. Both run on Windows or Mac OS X operating systems.

1 Installing Driver and Phantom 2 Vision+ Assistant

1.1 Installing and Running on Windows

(1) Download the driver installer and Assistant installer (.EXE) from the Phantom 2 Vision+ download page. (2) Connect the Phantom 2 Vision+ to a PC using a Micro-USB cable.

(3) Run the driver installer and follow the prompts to finish installation.

(4) Run the Assistant installer and follow the prompts to finish installation.

(5) Double click the Phantom 2 Vision+ icon on your desktop to launch Assistant.

Supports Windows XP, Windows 7 and Windows 8 (32 or 64 bit).

1.2 Installing and Running on Mac OS X

(1) Download the Assistant installer (.DMG) format from the Phantom 2 Vision+ download page. (2) Run the installer and follow the prompts to finish

installation.

Figure 108

(3) When launching for the first time, if using Launchpad to run the Phantom 2 Vision+ Assistant, Launchpad will not allow access because Assistant has not been reviewed by the Mac App Store.

Figure 109

(4) Locate the Phantom 2 Vision+ icon in Finder, press Control then click the icon (or right-click the icon using a mouse). Choose Open from the shortcut menu, then click Open in the prompt dialog box to launch.

(5) After the first successful launch, double click the Phantom 2 Vision+ icon as normal to launch using Finder or Launchpad.

Figure 110

Installing Driver and Phantom 2 Vision+ Assistant

PC / MAC Assistant

DMG installer supports Mac OS X 10.9 or above.

Phantom 2 Vision+ Assistant on Mac OS X and Windows are the same. Assistant pages shown in this manual are from the Windows version.

2 Using Assistant

The Phantom 2 Vision+ Assistant is used to configure the flight control system and upgrade firmware. The Phantom RC Assistant is used to configure the Remote Control and upgrade its firmware.

2.1 Using the Phantom 2 Vision+ Assistant

Figure 111

(1) Power on the PC and the Phantom 2 Vision+. Connect the Phantom 2 Vision+ to the PC with a Micro-USB cable. DO NOT disconnect until configuration is finished.

(2) Run Phantom 2 Vision+ Assistant and wait for the Phantom 2 Vision+ to connect. Watch the indicators on the bottom of the screen. When connected successfully, the Computer Connection status is and Data Exchange Indicator blinks .

(3) Choose [Basic] or [Advanced] configuration pages.

(4) View and check the current configuration in the [View] page.

View configurations RC, Gain Gimbal, Battery, Flight Limits

Data Exchange Indicator Computer Connection status

Figure 112

Function switch between Phantom and Naza-M working modo

Language swap

Account, software version Firmware upgrade

IMU calibration

* This image is for reference only. Please refer to the actual user interface.

Using Assistant

Do not enable Naza-M mode before finishing "Advanced Flight Maneuvers" in the "Phantom Pilot Training Guide".

Enable Phantom mode by tapping the same button if Naza-M mode is enabled. Once changed to Phantom working mode, all parameters will return to factory settings.

2.2 Firmware Upgrade of the Phantom 2 Vision+

(1) Click [Upgrade] icon to check the current firmware version and whether the installed firmware is the latest version. If not, click links to upgrade.

(2) Wait until the Assistant shows "finished". Click OK and power cycle the Phantom 2 Vision+ after 5 seconds. Once complete, firmware is up to date.

Firmware upgradable items Current firmware version

Upgrade link

* This image is for reference only. Please refer to the actual user interface.

Figure 113

An internet connection is required to upgrade the Phantom 2 Vision+ firmware.

DO NOT power off until the upgrade is finished.

If the firmware upgrade fails, the Flight Controller will enter a waiting for firmware upgrade status automatically. If this happens, repeat the above procedures.

Firmware upgradable items: (1)Flight Controller (2)GPS (3)5.8G Receiver (4) Main Board (P330CB) (5)Battery (6) Gimbal IMU

2.3 Using the Phantom RC Assistant

Use the Phantom 2 Vision+ Assistant to install PHANTOM RC Assistant on your Windows PC or Mac, and then follow the below steps to configure the Remote Control.

Figure 114

(1) Turn off the Remote Control and find its Micro-USB slot.

(2) Power on PC and Remote Control then connect Remote Control to the PC with a Micro-USB cable. DO NOT disconnect until configuration is finished.

(3) Run the PHANTOM RC Assistant and wait for the Remote Control to connect to Assistant. Watch the indicators on the bottom left of the screen. When connected successfully, the Computer Connection status is Exchange Indicator blinks .

and Data
(4) Finish configuration in the [Main] page.
(5) Finish upgrade in the [Info] page if necessary.
Main page
Data Exchange Indicator Computer Connection status
Language swap
Firmware upgrade, Account, Software version
Figure 115
*This image is for reference only. Please refer to the actual user interface.
PC / MAC Assistant
Using Assistant
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Rear LED Flight Indicators
(Red, Green, Yellow flashes in turn)
(Green, Yellow flashes in turn) (Slow Green flashes)
Normal status
Power On Self-Test
Warming Up Ready to Fly
(Slow Yellow flashes)
Rear LED Flight Indicators
(Quick Yellow flashes)
Ready to Fly (non-GPS)
Abnormal status
Remote Control Signal Lost
(Slow Red flashes) Quick Red flashes)
(
(Three Red flashes off and on) —— (Solid red)
Low Battery Level Warning Critical Low Battery Level Warning
Not Stationary or Sensor Bias is too big Error*
(Red, Yellow flashes in turn)
Compass Needs Calibration
Aircraft
Weight (Battery & Propellers included) Recommend payload
Maximum payload
1242g ≤1300g 1350g
Max Yaw Angular Velocity
200°/s
Max Ascent / Descent Speed
Ascent: 6m/s; Descent: 2m/s
Motor Diagonal Length
350mm
3-axial stabilized Gimbal
Control Accuracy
±0.03°
Maximum Angular Speed
Pitch : 90°/s
Camera
Sensor Size
1/2.3"
Resolution
4384×3288
Recording FOV
110° / 85°

Appendix
1 Rear LED Flight Indicator Status
*You can learn more about error by connecting the Phantom 2 Vision+ to the Assistant.
2 Specifications
Supported Battery
Hovering Accuracy (Ready to Fly) Max Tiltable Angle
Max Flight Speed
Working Current Controllable Range
Operating Environment Temperature Effective Pixels
HD Recording
DJI 5200mAh Li-Po Battery
Vertical: 0.8m; Horizontal: 2.5m 35°
15m/s (Not Recommended)

Static : 750mA; Dynamic : 900mA Pitch : - 90° - 0°
0°C - 40°C
14 Megapixels 1080p30 /1080i60
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Appendix
Operating Frequency Receiver Sensitivity (1%PER) Working Current/Voltage
Operating Frequency Transmitting Power
3 Troubleshooting (FAQ)
5.728 GHz - 5.85 GHz -93dBm 120mA@3.7V
2412MHz - 2462MHz 20dBm
Appendix

Remote Control
Communication Distance (open area)
CE Compliance: 400m; FCC Compliance: 800m
Transmitting Power (EIRP)
CE Compliance: 25mW; FCC Compliance: 100mW
Battery
2000mAh rechargeable LiPo battery
Range Extender
Communication Distance (open area)
500m - 700m
Power Consumption
2W

3.1 How to solve large margin(s) mid-point error?
If the Remote Control stick(s) mid-point margin of error is too big, the motors will fail to start when you execute the CSC and the Phantom will not take off. The below are some possible fixes for this.
(1) One of the Remote Control's stick positions (except the throttle stick) is not centered when powering on the Phantom 2 Vision+.
Solution: Place all Remote Control sticks at their mid-point positions and then power cycle the Phantom 2 Vision+ to re-record the mid-point.
(2) The Remote Control sticks have been trimmed, leading to a deviation in the mid-point position.
Solution: Use Assistant to perform a Remote Control calibration.
a) Connect to Assistant, tap Basic -> RC -> Command Sticks Calibration and push all Remote Control sticks through
their complete travel range to see if any stick cannot reach its outermost position. b) Power cycle the Phantom 2 Vision+. Power cycling is required.
c) Re-attempt Remote Control calibration in Assistant.
If the above solutions do not solve your issue, please send your Remote Control to DJI Customer service for repair.

3.2 How to restore a video file if power is turned off during a recording session?
Solution: Keep or place the Micro-SD card back into the camera. Power cycle the camera and wait about 30 seconds for the video file to be restored.

3.3 Failure to acquire the SSID.
Solution: Double check whether both the camera and Range Extender are powered on and the power switch of the camera is switched to "Wi-Fi ON."

3.4 What to do if Phantom 2 Vision+ is out of sight and the Wi-Fi connections is lost?
Solution: Turn off the Remote Control to trigger the Failsafe mode and the aircraft will start to fly back, descend, and land at the Home point. Please make sure there are no obstacles between the Phantom and the home point and that you are familiar with the procedure for regaining control.

3.5 Wi-Fi connection fails all the time.
Solution: Double check the current Wi-Fi connection status of the mobile device. The mobile device may be connecting to other Wi-Fi networks after a connection breaks with the Phantom 2 Vision+.

3.6 Files fail to synchronize.
Solution: Video files that are too large (file sizes close to 4GB) cannot be synchronized to the mobile device. Some mobile devices do not support the synchronization of the 1080i60 video files.

Appendix
Appendix

3.7 iOS Albums fail to synchronize.
Solution: Reset the settings of your mobile device as illustrated below. Enable the Settings -> Private -> Photos -> DJI VISION. Otherwise Albums will fail to synchronize with your mobile device.
Figure 116 Figure 117 Figure 118

3.8 Failure to share.
Solution: Make sure your mobile device has access to the Internet.

3.9 Some Android devices have a problem connecting to the Phantom 2 Vision+ Wi-Fi Extender.
Solution: Some Android devices do not allow for both a Wi-Fi connection and a mobile data connection at the same time. When trying to connect to the Phantom 2 Vision+ Wi-Fi network, most devices will check whether an Internet connection has a certain Wi-Fi setting enabled, e.g. Auto network switch or Test for Internet connection. If no Internet connection is found because the Phantom 2 Vision+ creates a non-routable connection it will drop the Phantom 2 Vision+ Wi- Fi network connection and scan for the next available connection. Example: For the Samsung Note 3, carry out the following procedures to solve this issue. Tap Settings -> Wi-Fi, and then tap the "Menu" button. Select "Advanced" then uncheck the "Auto network switch". You might see a warning that indicates the Internet connection is unstable this message can be ignored.

3.10 App tips for mobile devices.
Solution: If using the App on multiple mobile devices turn off the App on the first mobile device then turn it on the second one to ensure normal functions on the second mobile device.

3.11 How to land the aircraft more smoothly?
Solution: First pull the throttle stick position down to lower than 5%, then execute the CSC command to stop the motors.

3.12 Why is the discharge time of a battery not zero when unused?
Solution: A battery aging test is performed prior to delivery which affects the discharge time of the new battery. This is why the discharge time of a new battery is not zero. The battery is okay to use.

3.13 Do I need extra hardware to utilize ground station?
Solution: No extra hardware is required.

3.14 Does ground station support caching map data offline?
Solution: Yes, user can cache map data in ground station for future use.

3.15 What if I accidently exit DJI Vision App in ground station mode?
If DJI Vision App is closed when aircraft is executing flight mission, aircraft continues with the remaining flight mission.
If DJI Vision App is closed and failed to re-connect with aircraft within 1 minute, aircraft returns home point automatically.
Appendix

User manual is subject to change without prior notice.

www.dji.com/support
Download the latest user manual from

User Manual for Inspire one

INSPIRE 1

User Manual 2014.12

V1.0

Using this manual

Legends

Warning Important Hints and Tips Reference

Before Flight

The following tutorials and manuals have been produced to ensure you to make full use of your Inspire 1.

1.Disclaimer
2.In the Box
3.Inspire 1 Quick Start Guide
4.Safety Guidelines
5.Inspire 1 User Manual
6.Intelligent Flight Battery Safety Guidelines

Watching all the tutorial videos and reading the Disclaimer before flight is recommended. Afterwards, prepare for your first flight by using the Inspire 1 Quick Start Guide. Refer to this manual for more comprehensive information.

Watch the video tutorials

Please watch the tutorial video below to learn how to use Inspire 1 correctly and safely: www.dji.com/product/inspire-1/video

Download the DJI Pilot app

Download and install the DJI Pilot app before use. Scan the QR code or visit "http://m.dji.net/djipilot" to download the app.
For the best experience, use mobile device with Andriod V 4.1.2 or above, iOS version is coming soon.

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Contents

Product Profile

Edward Youn, owner of Jason Youn Photography LLC Phoenix AZ - Section 333 Exemption Petition

This chapter describes the features of Inspire 1, instructs you to assemble the aircraft and explains the components on the aircraft and remote controllers.

5

Product Profile

Introduction

The Inspire 1 is brand new quadcopter capable of capturing 4K video and transmitting an HD video signal (up to 2km) to multiple devices straight out of the box. Equipped with retractable landing gear, it can capture an unobstructed 360 degree view from its camera. The built-in camera has an integrated gimbal to maximize stability and weight efficiency while minimizing space. When no GPS signal is available, Vision Positioning technology provides hovering precision.

Feature Highlights

Camera and Gimbal: Up to 4K video recording and 12 megapixel photo capture. Reserved mounting space for ND filters for better exposure control. New quick-release mount allows you to remove the camera with ease.

HD Video Downlink: Low latency, HD downlink powered by an enhanced version of the DJI Lightbridge system. It also provides dual controllers mode.

Landing gear: Retractable landing gear that enables an unobstructed panoramic view from the camera. **DJI Intelligent Flight Battery:** 4500 mAh DJI Intelligent Flight Battery employs new battery cells and a battery management system.

Flight Controller: The next generation flight controller system provides a more reliable flight experience. A new flight recorder stores the flight data from each flight, and Vision Positioning enhances hovering precision when no GPS is available.

Product Profile

6

Assemble the Aircraft Unlocking Travel Mode

The aircraft is in Travel Mode during delivery. Follow these steps to change it to Landing Mode before your first flight:

1. Insert the Intelligent Flight Battery into the battery compartment.
2. Power on the Remote Controller and the Intelligent Flight Battery.
3. Toggle the Transformation Switch up and down at least four times. 4. Power off the aircraft.

Travel Mode Toggle×4 Landing Mode

Battery must be fully charged before using it for the first time. Refer to "Charging the Intelligent Flight Battery" (P21) for more information .

If you have purchased the dual remote controller version, you must use the Master remote controller to deactivate Travel Mode. Refer to "Setting Up Dual Remote Controllers Mode" (P30) section for more infromation about Master remote controller.

Be sure to remove the gimbal from the aircraft before switch from Landing Mode to Travel Mode. Place the aircraft on the smooth and reflective surface (e.g. table or tile) before switching between the travel modes to the landing mode. Do not place the aircraft on the rough and sound-absorbing surface (e.g. carpet) before switching between the travel modes and landing mode.

Installing Gimbal and Camera

1. Remove Gimbal Cover.
2. Rotate the Gimbal Lock to the unlocked position (to the right when facing the nose of the aircraft). 3. Insert the gimbal by aligning the white mark on the Gimbal.
4. Rotate the Gimbal Lock back into the locked position.

1
Gimbal Cover

3 Gimbal Lock Mounting Place
Gimbal Connector

2
Locked

Ensure the Micro-SD card is correctly inserted into the camera.

INSPIRE 1 User Manual
Product Profile

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INSPIRE 1 User Manual Attaching Propellers

Attach propellers with the black nut onto motors with the black dot and spin counter-clockwise to secure. Attach propellers with gray nut onto motors without a black dot and spin clockwise to secure.

Product Profile

Place all propellers onto the correct motor and tighten by hand to ensure security before flight.

Preparing Remote Controller

Tilt the Mobile Device Holder to the desired position then adjust the antenna as shown.

1. Press the button on the side of the Mobile Device Holder to release the clamp, adjust it to fit then attach your mobile device.
2. Connect your mobile device to the remote controller with a USB cable.
3. Plug one end of the cable into your mobile device, and the other end into the USB port on the back of the remote controller.

8

Aircraft Diagram

[6]

[11]
[1]
[7] [8]
[1] GPS
[2] Propeller (P17)

Remote Controller Diagram

[9] [8]
[7]
[1] [2]
[3] [4] [5] [6]
[1] Antennas (P29)

Relays aircraft control and video signal.
[2] Mobile Device Holder

Mounting place for your mobile device.
[3] Control Stick

Controls aircraft orientation.
[4] Return Home (RTH) Button (P13)

Press and hold the button to initiate Return to Home (RTH).
[5] Transformation Switch (P27)

Toggle the switch up or down to raise or lower the landing gear.
[2]
[3] [3]
Motor
[4]
[4] [5]
[9]
[10] [8]
[12]
[13]
Aircraft Micro-USB Port
[9] Rear LED (P12)
[10] Camera Micro-USB Port
[11] Camera Micro-SD Card Slot (P35)
[12] Vision Positioning Sensors (P16)
[13] Aircraft Status Indicator (P13)
Front LED (P12) [5] Landing gear

INSPIRE 1
User Manual
Product Profile
[6] Gimbal and Camera (P37)
[7] Intelligent Flight Battery (P18)

INSPIRE 1 User Manual
[6] Battery Level LEDs

Displays the current battery level.
[7] Status LED

Displays the power status.
[10] Camera Settings Dial

Turn the dial to adjust camera settings. Only functions when the remote controller is connected to a mobile device running the DJI Pilot app.
[11] Playback Button

Playback the captured images or videos.
[12] Shutter Button

Press to take a photo. If in burst mode, the set number of photos will be taken with one press.
[13] Flight Mode Switch

Used to switch between P, A and F mode.
[14] Video Recording Button

Press to start recording video. Press again to stop recording.
[15] Gimbal Dial

Use this dial to control the tilt of the gimbal.
[16] Micro-USB Port

For connecting the remote controller to your computer.
[17] Mini-HDMI Port

Connect an HD compatible monitor to this port to get a live HD video preview of what the camera sees.
[20]
[23] [21]
[22]
[18] CAN Bus Port

Reserved for future use.
[19] USB Port

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[8] Power Button
Used to power on or power off the remote controller.
[9] RTH LED
Circular LED around the RTH button displays RTH status.
[16] [17] [18] [19]
[15] [10]
[14] [13]
[11] [12]
Product Profile
Connect to mobile device to access all of the DJI Pilot app controls and features.
[20] GPS Module
Used to pinpoint the location of the remote controller.
[21] Back Left Button
Customizable button in DJI Pilot app.
[22] Power Port
Connect to a power source to charge the remote controller's internal battery.
[23] Back Right Button
Customizable button in DJI Pilot app.

Aircraft

This chapter describes the features of the Flight Controller, Vision Positioning System and the Intelligent Flight Battery.

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Aircraft

Flight Controller

The Inspire 1's flight controller is based on DJI flight controller with several enhancements such as new flight mode and new safe mode. Three safe modes are available: Failsafe, Return Home and Dynamic Home Point. These features ensure the safe return of your aircraft if the control signal is lost. A flight recorder stores crucial flight data for each flight.

Flight Mode

Three flight modes are available. The details of each flight mode are found in the section below:

P mode (Positioning) : P mode works best when GPS signal is strong. There are three different states of P mode, which will be automatically selected by the Inspire 1 depending on GPS signal strength and Vision Positioning sensors:

P-GPS: GPS and Vision Positioning both are available, and the aircraft is using GPS for positioning. P-OPTI: Vision Positioning is available but the GPS signal is not. Aircraft is using only Vision Positioning for hovering

P-ATTI: Neither GPS or Vision Positioning available, aircraft is using only its barometer for positioning, so only altitude is controlled.

A mode (Attitude): The GPS and Vision Positioning System is not used for holding position. The aircraft only uses its barometer to maintain altitude. If it is still receiving a GPS signal, the aircraft can automatically return home if the Remote Controller signal is lost and if the Home Point has been recorded successfully. **F mode (Function):** Intelligent Orientation Control (IOC) is activated in this mode. For more information about IOC, refer to the IOC in Appendix.

Use the Flight Controller mode switch to change the flight mode of the aircraft, refer to the "Flight Mode Switch" on P27 for more information.

Flight Status Indicator

The INSPIRE 1 comes with the Front LED, Rear LED and Aircraft Status Indicator. The positions of these LEDs are shown in the figure below:

Aircraft Status Indicator
Front LED Rear LED

The Front and Rear LED show the orientation of the aircraft. The Front LED displays solid red and the Rear LED displays solid green.

Aircraft Status Indicator shows the system status of the flight controller. Refer to the table below for more information about the Aircraft Status Indicator:

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Aircraft
Green and Yellow Flash Alternatively
Aircraft warming up
INSPIRE 1 User Manual
Aircraft Status Indicator Description
Normal
        Red,GreenandYellowFlash
Alternatively
Green Flashes Slowly
Yellow Flashes Slowly Fast Yellow Flashing
Fast Red Flashing — Solid Red

Return to Home (RTH)

Power on and self-check
Safe to Fly (P mode with GPS and Vision Positioning)
Safe to Fly (A mode but No GPS and Vision Positioning) Remote Controller Signal Lost
Critical Low Battery Warning Critical Error
X2	Green Flashes Twice
Safe to Fly (P mode with Vision Positioning but without GPS)
Warning
Slow Red Flashing
Low Battery Warning
Red Flashing Alternatively
IMU Error
Red and Yellow Flash Alternatively
Compass Calibration Required
The Return to Home (RTH) brings the aircraft back to the last recorded Home Point. There are three cases that will trigger RTH procedure; they are Smart RTH, Low Battery RTH and Failsafe RTH.
Home Point
Smart RTH
The Home Point is the location at which your aircraft takes off when the GPS signal is strong. You can view the GPS signal strength through the GPS icon (   ). If you are using the Dynamic Home Point setting, the Home Point will be updated to your current position as you move around and when the Aircraft Status Indicator blinks green.
GPS
Description
Using the RTH button on the remote controller (refer to "RTH button" on P28 for more information) or the RTH button in the DJI Pilot app when GPS is available to enables smart RTH. The aircraft return to the latest recorded Home Point, you may control the aircraft's orientation to avoid collision during the Smart RTH. Press the Smart RTH button once to start the process, press the Smart RTH button again to exit Smart RTH and regain the control.
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Aircraft
Battery Level Warning
Remark
Aircraft Status Indicator
DJI Pilot app
Flight Instructions
Low battery level warning
The battery power is low. Please land the aircraft.
Aircraft status indicator blinks RED slowly.
Tap "Go-home" to have
the aircraft return to the Home point and land automatically, or "Cancel" to resume normal flight. If no action is taken, the aircraft will automatically go home and land after 10 seconds. Remote controller will sound an alarm.
Fly the aircraft back and land it as soon as possible, then stop the motors and replace the battery.
Critical Low battery level warning
The aircraft must land immediately.
Aircraft status indicator blinks RED quickly.
The DJI Pilot app screen will flash red and aircraft starts to descend. Remote controller will sound an alarm.
The aircraft
will begin to descend and land automatically.
Estimated remaining flight time
Estimated remaining flight based on current battery level.
N/A
N/A
N/A
INSPIRE 1 User Manual Low Battery RTH
The low battery level failsafe is triggered when the DJI Intelligent Flight Battery is depleted to a point that may affect the safe return of the aircraft. Users are advised to return home or land the aircraft immediately when these warnings are shown. DJI Pilot app will advise user to return the aircraft to the Home Point when low battery warning is triggered. Aircraft will automatically return to the Home Point if no action is taken after 10 seconds countdown. User can cancel the RTH by pressing once on the RTH button. The thresholds for these warnings are automatically determined based on the current aircraft altitude and its distance from the Home Point.
Aircraft will land automatically if the current battery level can only support the aircraft to land to the ground from the current altitude. User can use the remote controller to control the aircraft's orientation during the landing process.
The Battery Level Indicator is displayed in the DJI Pilot app, and is described below
Critical Low battery level warning(Red)
Low battery level warning

Power requires to return home
Sufficient battery level(Green)
Remaining flight time
Battery level indicator
14 © 2014 DJI. All Rights Reserved.

Aircraft

When the critical battery level warning activates and the aircraft is descending to land automatically, you may push the throttle upward to hover the aircraft and navigate it to a more appropriate location for landing.

Color zones and markers on the battery level indicator reflect estimated remaining flight time and are adjusted automatically, according to the aircraft's current status.

Failsafe RTH

Failsafe RTH is activated automatically if remote controller signal (including video relay signal) is lost for more than 3 seconds provided that Home Point has been successfully recorded and compass is working normally. Return home process may be interrupted and the operator can regain control over the aircraft if a remote controller signal is resumed.

Failsafe Illustration

1 Record Home Point (HP)
Blinking Green
4 Signal Lost Lasts 3secs.
Fast Blinking Yellow
2 Confirm Home Point
<8m
Blinking Green
5 Go Home(20m can be set)
Height over HP>20m   Elevate to 20m
                  20m
Height over HP<=20m
Fast Blinking Yellow
3 Remote Controller Signal Lost
Fast Blinking Yellow
6 Landing after Hovering 15secs
Fast Blinking Yellow

Aircraft cannot avoid obstruction during the Failsafe RTH, therefore it is important to set an reasonable Failsafe altitude before each flight. Launch the DJI Pilot app and enter "Camera" view and select "MODE" to set the Failsafe altitude.

Dynamic Home Point

Dynamic home point is useful in situations when you are in motion and require a Home Point that is different from the takeoff point. GPS module is located at the position shown in the figure below:

GPS

Ensure the space above the GPS module is not obstructed when using Dynamic Home Point.

INSPIRE 1 User Manual
Aircraft
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INSPIRE 1 User Manual

There are two options for Dynamic Home Point.

1. Set the aircraft current coordinate as the new Home Point.

2. Set the remote controller's coordinate as the new Home Point.

Setting Up Dynamic Home Point

Follow the steps below to setup Dynamic Home Point:

1. Connect to the mobile device and launch the DJI Pilot app and go to the "Camera" page.

2. Tap" "and select" ", to reset the remote controller's coordinates as the new Home Point.

3.Tap" "andselect" ",toresettheaircraft'scoordinatesasthenewHomePoint. 4. The aircraft status indicator blinks green to show Home

Point is set succesfully.

Vision Positioning System

DJI Vision Positioning is a positioning system that uses ultrasonic and image data to help the aircraft identify its current position. With the help of Vision Positioning, your Inspire 1 can hover in place more precisely and fly indoors or in other environments where there is no GPS signal available. The main components of DJI Vision Positioning are located on the bottom of your Inspire 1, including [1]two sonar sensors and[2]one monocular camera.

Aircraft
Using Vision Positioning
[1]
Vision Positioning is activated automatically when the Inspire 1 is powered on. No manual action is required. Vision Positioning is typically used in the indoor environment where no GPS is available. By using the sensors on the Vision Positioning system, Inspire 1 can perform precision hovering even when no GPS is available.
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[2]
INSPIRE 1
User Manual
Follow the steps below to use Vision Positioning:
1. Toggle the switch to "P" as shown the figure to the right:

2. Place the Inspire 1 on a flat surface. Notice that the Vision Positioning system
cannot work properly on surfaces without pattern variations.
3. Power on the Inspire 1. The aircraft status indicator will flash twice in green light, which indicates the Vision Positioning system is ready. Gently push the throttle up
to lift off, and the Inspire 1 will hover in place.
The performance of your Inspire 1's Vision Positioning System is subject to the surface you are flying over. The ultrasonic waves may not be able to accurately measure the distance over sound absorbing materials, and the camera may not function correctly in suboptimal environments. The aircraft will switch from "P" mode to "A" mode automatically if both GPS and Vision Positioning System are not available. So operate the aircraft cautiously when in any of the following situations:
Flying over monochrome surfaces (e.g. pure black, pure white, pure red, pure green). Flying over a highly reflective surfaces.
Flying at high speeds(over 8m/s at 2 meters or over 4m/s at 1 meter).
Flying over water or transparent surfaces.
Flying over moving surfaces or objects.
Flying in an area where the lighting changes frequently or drastically.
Flying over extremely dark (lux < 10) or bright (lux > 100,000) surfaces.
Flying over surfaces that can absorb sound waves (e.g. thick carpet).
Flying over surfaces without clear patterns or texture.
Flying over surfaces with identical repeating patterns or textures (e.g. tiles with same design). Flying over inclined surfaces that will deflect sound waves away from the aircraft.
Keep the sensors clean at all times. Dirt or other debris may adversely affect the effectiveness of the sensors.
The effective hovering altitudes of the aircraft is from 0 to 2.5 meters.
Vision Positioning system may not function properly when the aircraft is flying over water. Vision Positioning system may not be able to recognize pattern on the ground in low light conditions (less than 100lux).
Do not use other ultrasonic devices with frequency of 40 KHz when Vision Positioning system is in operation.
Vision Positioning system may not be able to stabilize the aircraft when flying close to the ground (below 0.5 meters) in fast speed.
Keep the animals away from the aircraft when Vision Positioning system is activated. The sonar sensor emits high frequency sound that is only audible to some animals.

Flight Recorder
Flight data is automatically recorded to the SD card. This includes flight duration, orientation, distance, aircraft status information, speed, and other parameters.

Attaching and Detaching the Propellers
Use only DJI approved propellers with your Inspire 1. The grey or black nut on the propeller indicates the rotation direction of the propeller and where it should be attached. To attach the propellers properly, match the nut with the dots on the motors of your Inspire 1:

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Aircraft
INSPIRE 1 User Manual
Propellers
Figure
Attach On Legends
Grey cap(1345) Black cap(1345R)
Motors without a black dot Motors with a black dot
Lock : Turn the propellers in the indicated direction to mount and tighten
Unlock : Turn the propellers in the indicated direction to loosen and remove
Attaching the Propellers
1. Attach the propellers with a grey nut onto a motor without a black dot and spin the propellers clockwise to secure them in place. Attach the propellers with a black nut onto a motor with a black dot and spin the propellers counter clockwise to secure its position. Be sure to completely tighten each propeller by hand before flight.
Ensure propellers are attached to its corresponding motors, otherwise the aircraft cannot take off. Handling the propellers with care.
Manually tighten each of the propellers on the corresponding motors to ensure it is attached firmly.
Detaching the Propellers
Hold the motor still. Then spin the propeller in the unlock direction indicated on the propeller itself.
Check that the propellers and motors are installed correctly and firmly before every flight. Ensure that all propellers are in good condition before each flight. DO NOT use old, chipped, or broken propellers.
Toavoidinjury,STAND CLEARofandDONOTtouchpropellersormotorswhentheyarespinning. ONLY use original DJI propellers for a better and safer flight experience.

DJI Intelligent Flight Battery
The DJI Intelligent Flight Battery has a capacity of 4500mAh, voltage of 22.2V, and smart charge- discharge functionality. It can only be charged with an appropriate DJI approved charger.
Intelligent Flight Battery Charger
Aircraft

INSPIRE 1 User Manual Battery must be fully charged before using it for the first time. Refer to "Charging the Intelligent Flight Battery" P21 for more information .

DJI Intelligent Flight Battery Functions

1. Battery Level Display: LEDs display the current battery level.
2. Battery Life Display: LEDs display the current battery power cycle.
3. Auto-discharging Function: The battery automatically discharges to below 65% of total power when it is idle for more than 10 days to prevent swelling. It takes around 2 days to discharge the battery to 65%. It is normal to feel moderate heat emitting from the battery during the discharge process. Discharge thresholds can be set in the DJI Pilot app.
4. Balanced Charging: Automatically balances the voltage of each battery cell when charging.
5. Over charge Protection: Charging automatically stops when the battery is fully charged.
6. Temperature Detection: The battery will only charge when the temperature is between 0 °C(32°F) and 40°C (104°F).
7. Over Current Protection: Battery stops charging when high amperage (more than 10A) is detected.
8. Over Discharge Protection: Discharging automatically stops when the battery voltage reaches 18V to prevent over-discharge damage
9. Short Circuit Protection: Automatically cuts the power supply when a short circuit is detected.
10. Battery Cell Damages Protection: DJI Pilot app shows warning message when damaged battery cell is detected.
11. Battery Error History Browse the battery error history from the DJI Pilot app.
12. Sleep Mode: Sleep mode is entered after 10 minutes of inactivity to save power.
13. Communication: Battery voltage, capacity, current, and other relevant information is provided to the aircraft's to the main controller.

Refer to Disclaimer and Intelligent Flight Battery Safety Guidelins before use. Users take full responsibility for all operations and usage.

Using the Battery

LED4 LED2
LED3 LED1
Power Button (Bulit-in LED)

Powering ON/OFF

Powering On: Press the Power Button once, then press again and hold for 2 seconds to power on. The Power LED will turn red and the Battery Level Indicators will display the current battery level.

Powering Off: Press the Power Button once, then press again and hold for 2 seconds to power off.

Aircraft

Battery Level

LED1
LED2
LED3
LED4

Battery Level

75%~87.5% 50%~62.5% 25%~37.5% 0%~12.5%

INSPIRE 1 User Manual Low Temperature Notice:

1. Battery capacity is significantly reduced when flying in low temperature environment (< 0°C).
2. It is not recommended to use the battery in extremely low temperature (< -10°C) environment. Battery voltage should reach to the appropriate level when using in the environment where temperature range between -10°C to 5°C.
3. Stop flying when DJI Pilot app displays "Low Battery Level Warning" in low temperature environment.
4. Place the battery indoors to warm up the battery before using it in the low temperature environment.
5. To ensure the performance of the battery, keep the battery body temperature above 20°C.

In cold environments, insert the battery into the battery compartment and allow the aircraft to warm up for approximately 1-2 minutes before taking off.

Checking the battery level

The Battery Level Indicators display how much remaining power the battery has. When the battery is powered off, press the Power Button once. The Battery Level Indicators will light up to display the current battery level. See below for details.

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

: LED is on.
: LED is off.
: LED is flashing.

87.5%~100%
62.5%~75% 37.5%~50% 12.5%~25% =0%

Aircraft

INSPIRE 1 User Manual

Battery life

The battery life indicates how many more times the battery can be discharged and recharged before it must be replaced. When the battery is powered off, press and hold the Power Button for 5 seconds to check the battery life. The Battery Level Indicators will light up and/or blink as described below for 2 seconds:

Battery Life
LED1
LED2
LED3
LED4

Battery Life
90%~100%
80%~90%
70%~80%
60%~70%
50%~60%
40%~50%
30%~40%
20%~30%
below 20%

When battery life reaches 0%, it can no longer be used.

For more information about the battery, launch DJI Pilot app and check the information under the battery tab.

Charging the Intelligent Flight Battery

1. Connect Battery Charger to a power source (100-240V 50/60Hz).
2. Open the Protection Cap and connect the Intelligent Flight Battery to the Battery Charger. If the battery level is above 95%, turn on the battery before charging.
3. The Battery Level Indicator will display the current battery level during charging.
4. The Intelligent Flight Battery is fully charged when Battery Level Indicators are all off.
5. Air cool the Intelligent Flight Battery after each flight. Allow its temperature to drop to room temperature before storing it for an extended period.

Do not charge the Intelligent Flight Battery and remote controller with standard charger (model: A14-100P1A) at the same time, otherwise the charger may overheat.

Always turn off the battery before inserting it or removing it from the Inspire 1. Never insert or remove a battery when it is powered on.

Power Outlet
Intelligent Flight Battery
Charger
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Aircraft

Battery Level Indicators while Charging
LED1
LED2
LED3
LED4

Battery Level
0%~25%
25%~50% 50%~75%
75%~100%

Battery Level Indicators while Charging
LED1
LED2
LED3
LED4

Blinking Pattern
LED2 blinks twice per second
LED2 blinks three times per second LED3 blinks twice per second
LED3 blinks three times per second

Battery Protection Item
Over current detected
Short circuit detected Over charge detected
Over-voltage charger detected
LED4 blinks twice per second
LED4 blinks three times per second
Charging temperature is too high (>40°C)

INSPIRE 1 User Manual

Fully Charged The table below shows battery protection mechanisms and corresponding LED patterns.

Charging Protection LED Display

Charging temperature is too low (<0°C)

After any of the above mentioned protection issues are resolved, press the button to turn off the Battery Level Indicator. Unplug the Intelligent Flight Battery from the charger and plug it back in to resume charging. Note that you do not need to unplug and plug the charger in the event of a room temperature error, the charger will resume charging when the temperature falls within the normal range.

DJI does not take any responsibility for damage caused by third-party chargers.

How to discharge your Intelligent Flight Battery:

Slow: Place the Intelligent Flight Battery into the Inspire 1's Battery Compartment and power it on. Leave it on until there is less than 8% of power left, or until the battery can no longer be turned on. Launch the DJI Pilot app to check battery level.

Rapid: Fly the Inspire 1 outdoors until there is less than 8% of power left, or until the battery can no longer be turned on.

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Aircraft

Remote Controllers

This chapter describes the features of the remote controller that includes aircraft and remote controller operations and dual remote controller mode.

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INSPIRE 1 User Manual **Remote Controller**

Remote Controller Profile

The Inspire 1 Remote Controller is a multi-function wireless communication device that integrates the video downlink ground system and aircraft Remote Controller system. The video downlink and aircraft Remote Controller system operate at 2.4 GHz with maximum transmission distance of 2km. The remote controller features a number of camera functions, such as taking and previewing photos and video, and controlling gimbal motions. The remote controller is powered by a 2S rechargeable battery. The current battery level is displayed by LEDs on the front panel of the remote control.

Compliance Version: The Remote Controller is compliant with both CE and FCC regulations. **Operating Mode:** Control can be set to Mode 1 , Mode 2.

Mode 1: The right stick serves as the throttle.

Mode 2: The left stick serves as the throttle.

Do not operate more than 3 aircrafts within in the same area (size equivalent to a soccer field) to prevent transmission interference.

Remote Controller Operations Powering On And Off The Remote Controller

The Inspire 1 remote controller is powered by a 2S rechargeable battery with a capacity of 6000mAh. The battery level is indicated by the Battery Level LEDs on the front panel. Follow the steps below to power on your remote controller:

1. When powered off, press the Power Button once and the Battery Level LEDs will display the current battery level.

2. Then, press and hold the Power Button to power on the remote controller.

3. The Remote Controller will beep when it powers on. The Status LED will blink green (slave remote controller blinks solid purple) rapidly, indicating that the remote controller is linking to the aircraft. The Status LED will show a solid green light when linking is completed.

4. Repeat step 2 to power off the remote controller after finish using it.

Remote Controllers

Charging Remote Controller

Charge the remote controller via supplied charger.

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Power Button

Controlling Camera

Shoot videos or images and adjust camera settings via the Shutter Button, Camera Settings Dial, Playback Button and Video Recording Button on the remote control.

[1] Camera Settings Dial

[1] [4] [2]

[3]

Turn the dial to quickly adjust camera settings such as ISO and shutter speed without letting go of the remote controller. Move the dial button to left or right to view the pictures or videos in playback mode.

[2] Playback Button

Press to view images or videos that have already been captured.

[3] Shutter Button

Press to take a photo. If burst mode is activated, multiple photos will be taken with a single press.

[4] Recoding Button

Press once to start recording video, then press again to stop recording.

Controlling Aircraft

This section explains how to use the various features of the remote controller. The Remote Controller is set to Mode 2 by default.

INSPIRE 1 User Manual
Remote Controllers
INSPIRE 1 User Manual

Stick Neutral/ mid point: Control sticks of the Remote Controller are placed at the central position.

Move the Stick: The control stick is pushed away from the central position.

Remote Controllers
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Remote Controller (Mode 2)

Aircraft

(indicates nose direction)

Remarks

Moving the left stick up and down changes the aircraft's elevation.

Push the stick up to ascend and down to descend. Push the throttle stick up to takeoff.

When both sticks are centered, the Inspire 1 will hover in place.

The more the stick is pushed away from the center position, the faster the Inspire 1 will change elevation. Always push the stick gently to prevent sudden and unexpected elevation changes.

Moving the left stick to the left or right controls the rudder and rotation of the aircraft.

Push the sick left to rotate the aircraft counter clock-wise, and push the stick right to rotate the aircraft clockwise. If the stick is centered, the Inspire 1 will stay facing its current direction.

The more the stick is pushed away from the center position, the faster the Inspire 1 will rotate.

Moving the right stick up and down changes the aircraft's forward and backward pitch.

Push the stick up to fly forward and down to fly backward. The Inspire 1 will hover in place if the stick is centered.

Push the stick further away from the center position for a larger pitch angle (maximum 35 ˚) and faster flight.

Moving the right stick control left and right changes the aircraft's left and right pitch.

Push left to fly left and right to fly right. The Inspire 1 will hover in place if the stick is centered.

Push the stick further away from the center position for a larger pitch angle (maximum 35 ˚) and faster flight.

Gimbal Dial: Turn the dial to the right, and the camera will shift to point upwards. Turn the dial to the left, and the camera will shift to point downwards. The camera will remain in its current position when dial is static.

Toggle the switch to select the desired flight mode.

You may choose between; P mode, F mode and A mode. F

Figure Flight Mode

F Fmode A Amode P Pmode

A P

P mode (Positioning) : P mode works best when GPS signal is strong. There are three different states of P mode, which will be automatically selected by the Inspire 1 depending on GPS signal strength and Vision Positioning sensors:

P-GPS: GPS and Vision Positioning both are available, and the aircraft is using GPS for positioning. P-OPTI: Vision Positioning is available but the GPS signal is not. Aircraft is using only Vision Positioning for hovering

P-ATTI: Neither GPS or Vision Positioning available, aircraft is using only its barometer for positioning, so only altitude is controlled.

A mode (Attitude): The GPS and Vision Positioning System is not used for holding position. The aircraft only uses its barometer to maintain altitude. If it is still receiving a GPS signal, the aircraft can automatically return home if the Remote Controller signal is lost and if the Home Point has been recorded successfully.

F mode (Function): Intelligent Orientation Control (IOC) is activated in this mode. For more information about IOC, refer to the IOC in Appendix.

The Flight Mode Switch is locked in P mode by default. To unlock the switch, launch the DJI Pilot app, enter the "Camera" page, tap "MODE", and then activate "Multiple Flight Mode" .

Transformation Switch / RTH Button

The Transformation Switch / RTH Button combination serves two functions. Toggle the switch up or down to raise or lower the landing gear. Or, press the button to activate the Return to Home (RTH) procedure. Transformation Switch

This switch has two positions. The effect of toggling the switch to any of these positions is defined below:

1. **Raise:** Raise the landing gear to its upper most position.

INSPIRE 1

User Manual

Remote Controllers

INSPIRE 1 User Manual

2. **Lower:** The landing gear will lower to its lowest position for landing.

Do not raise the landing gear when the aircraft is on the ground. Ensure the landing gear is lowered before landing.

RTH button

Press and hold this button to start the Return to Home (RTH) procedure. The LED around the RTH Button will blink white to indicate the aircraft is entering RTH mode. The aircraft will then return to the last recorded Home Point. Press this button again to cancel the RTH procedure and regain the control of the aircraft.

Remote Controllers

Connecting Mobile Device

Tilt the Mobile Device Holder to the desired position. Press the button on the side of the Mobile Device Holder to release the clamp, and then place your mobile device into the clamp. Adjust the clamp to secure your mobile device. Then connect your mobile device to the remote controller with a USB cable. Plug one end of the cable into your mobile device, and the other end into the USB port on the back of the remote controller.

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Optimal Transmission Range

The signal transmission between aircraft and remote controller perform best within the range that displayed in the picture shown below:

Optimal Transmission Range
Strong Weak

Ensure the aircraft is flying within the optimal transmission range. Adjust the distance and position between the operator and the aircraft to achieve optimal transmission performance.

Dual Remote Controllers Mode

More than one remote controller can connect to the same aircraft in Dual Remote Controller mode. In Dual Controllers mode, the "Master" remote controller operator controls the orientation of the aircraft, while the "Slave" remote controller controls the movement of the gimbal and camera operation. When multiple "slave" remote controllers (max of 6) are connect to the aircraft, only the first connected "slave" remote controller is able to control the gimbal, the remaining "slave" remote controller can view the live feed video from the aircraft and set the camera parameters, but they cannot control the gimbal.

Maste Remote Slave Remote Controller Controller

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Remote Controllers

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INSPIRE 1 User Manual

Use the gimbal dial on the remote controller to control the pitch movement of the camera in the single remote controller mode, however, you cannot control the pan movement of the camera.

Setting Up Dual Remote Controllers Mode

Dual Remote Controllers mode is disabled by default. Users must enable this feature on the "Master" remote controller by through the DJI Pilot app. Follow the steps below for setup:

"Master" Remote Controller:

1. Connect the remote controller to your mobile device and launch the DJI Pilot app.
2. Go to the Camera page, and tap   to enter the remote controller settings window.
3. Tap "Set RC Status" to enable Master-and-Slave mode.
4. Select "Master" in the "Set RC Status" section to set the remote controller as "Master" remote controller.

RC Control Settings
Master and Slave Set RC Status
RC Name
Slave RC List
OFF
Connection Password 1234

5. Enter the connection password for the "Slave" remote controller.

"Slave" Remote Controller:

1. Tap "Search for Master Controller" to search the "Master" remote controller.

Slave
T12254

RC Control Setting
Master and Slave Set RC Status
RC Name
Master RC List
OFF   Master
S88642
Request Control Search for Master Controller

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Remote Controllers

Remote controller cannot link to the aircraft if the remote controller is set as "Slave". Meanwhile, the "Slave"remote controller cannot control the orientation of the aircraft. Reset the remote con- troller to "Master" in DJI Pilot app if you wish to link the remote controller to the aircraft.

2. Search the "Master" remote controller in the surrounding area in the "Request Control" section.

RC Control Settings

RC Control Settings

Master and Slave

Set RC Status
OFF
Master and Slave
Master
S88642
Request Control
RC Name
S88642
Set RC Status RC Name
Master RC List
Request Control

OFF Master

Search for Master Controller
INSPIRE 1 User Manual
Remote Controllers
RC Control Settings Master and Slave
Set RC Status
OFF Connection Password
　　　　Slave 1234
T12254
RC NameT12254 T12254 Master RC List
Slave RC List
Remote Controller Status LED
Search for Master Controller
3. Select the "Master" remote controller from the "Master RC List" and input the connection password to connect to the desired "Master" remote controller.
Master RC List
The Status LED reflects connection status between Remote Controller and aircraft. The RTH LED shows the Return to Home status of the aircraft. The table below contains details on these indicators.
Status LED
RTH LED
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INSPIRE 1 User Manual Status LED
— Solid Red — Solid Green — Solid Purple — Solid Blue
Slow Blinking Red
/
Red and Green/ Red and Yellow Alternate Blinks
RTH LED
— Solid White
Blinking White Blinking White
Alarm chime
chime D-D-
D-D- chime D-D-D……
None
Sound chime
D · · · DD ·· ·· ··
Remote Controller Status
The remote controller set as "Master" but it is not connected with the aircraft.
The remote controller set as "Master" and it is connected with the aircraft.
The remote controller set as "Slave" but it is not connected with the aircraft.
The remote controller set as "Slave" and it is connected with the aircraft.
Remote controller error.
HD Downlink is disrupted.
Remote Controller Status.
Aircraft is returning home.
Sending Return to Home command to the aircraft. Aircraft Return to Home in progress.
Remote Controllers
The Remote Status Indicator will blink red, sound an alert, when the battery level is critically low.

Linking the Remote Controller

The remote controller is linked to your aircraft before delivery. Linking is only required when using a new remote controller for the first time. Follow these steps to link a new remote controller:
1. Power on the remote controller and connect to the mobile device. Launch DJI Pilot app.
2. Power on the Intelligent Flight Battery.

Edward Youn, owner of Jason Youn Photography LLC Phoenix AZ - Section 333 Exemption Petition

3. Enter "Camera" view and tap on and then tap "Linking Remote Controller" button as shown below.

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Remote Control Calibration
Stick Mode

Default stick mode is Mode 2, changing stick modes alters the way the aircraft is controlled. Do not change unless familiar with your new mode.
C1 Gimbal Pitch/Yaw C2 Reset gimbal yaw
You can customize the C1 and C2 buttons on the back of the remote controller.

INSPIRE 1 User Manual 4. The remote controller is ready to link. The Remote Controller Status Indicator blinks blue and "beep" sound is emitted.
Stick Mode

Remote Control Calibration
Searching for aircraft frequency,
Default stick mode is Mode 2, changingtismtiecokumt oind5e4s saeltceorsndthse way the aircraft is controlled.
Do not change unless familiar with your new mode.
C1 Gimbal Pitch/Yaw C2 Reset gimbal yaw
Press the linking button on the aircraft to link this remote controller
Remote Controllers
Cancel
You can customize the C1 and C2 buttons on the back of the remote controller.

5. Locate the Linking button on the front of the aircraft, as shown in the figure shown below. Press the Linking button to start linking. The Remote Controller Status Indicator will display solid green if Link is succeed.
Remote controller cannot link to the aircraft if the remote controller is set as "Slave". Meanwhile, the "Slave"remote controller cannot control the orientation of the aircraft. Reset the remote controller to "Master" in DJI Pilot app if you wish to link the remote controller to the aircraft. Remote controller will disconnect from the linked aircraft if a new remote controller is linked to the same aircraft.

Remote Controller Compliance Version
The remote controller is compliant with both CE and FCC requirements.
C2
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Gimbal and Camera
This chapter provides the technical specifications of the camera and explains the working mode of the gimbal.
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Camera and Gimbal

Camera Profile
The on-board camera supports 4K video capture up to 4096x2160p24 and 12M pixel photos capture by using the 1/2.3 inch CMOS sensor. You may export the video in either MOV or MP4 format for editing. Available picture shooting modes include burst, continuous, and timer mode. A live preview of what the camera is seeing before you shoot videos and pictures is supported through the DJI Pilot App.

Camera Micro-SD Card Slot
To store your photos and videos, plug in the micro-SD card into the slot shown below before powering on the Inspire 1. The Inspire 1 comes with a 16GB micro-SD card and supports up to a 64GB micro-SD card. A UHS-1 type micro-SD card is recommended, because the fast read and write capability of these cards enables you to store high-resolution video data.
Gimbal and Camera
Do not remove micro-SD card from the Inspire 1 when it is powered on.

Camera Data Port
Power on the Inspire 1 and then connect a USB cable to the Camera Data Port to download photos or videos from the camera to your computer.
Power on the aircraft before attempting to download the files.
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INSPIRE 1 User Manual Camera Operation
Use the Shutter and Record button on the remote controller to shoot the images or the videos through the DJI Pilot app. For more information about how to use these buttons, refer to "Controlling Camera" P25.

ND Filter
Attach an ND filter to the front of the camera to reduce over-exposure and "jello" effect.

Gimbal Gimbal Profile
The 3-axis Gimbal provides a steady platform for the attached camera, allowing you to capture stabilized images and video. The Gimbal can tilt the camera up to 120 degrees and rotate 360 degrees.

+30° 0°
-90°
+330° -330°
Gimbal and Camera

Use the gimbal dial on the remote controller to control pitch movement of the camera by default. Note that you cannot control the pan motion of the camera by default. Enable the "Master-and-Slave"mode and set the remote controller to "Slave" state if you wish to control both the pan and pitch movement of the camera.

Use the gimbal dial on the remote controller to control the pitch movement of the camera in the single remote controller mode, however, you cannot control the pan movement of the camera.

Pan Control

Follow the instructions below to use the gimbal dial to control the pan movement of the gimbal:

1. Power on the aircraft and remote control, launch DJI Pilot app and enter "Camera" page.
2. Tap "RC Control Settings" icon and select either C1 or C2 customizable button as the gimbal pitch/ yaw switching button.
3. Select "Gimbal Pitch/Yaw" from the dropdown list.

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Using DJI Pilot App to Control Gimbal

Follow the steps below to use DJI Pilot app to control the gimbal orientation:

1. Launch DJI Pilot app, enter "Camera" page.
2. Tap and press on the screen until a blue circle is shown.
3. Slide to control the gimbal orientation within the "Camera" page as shown below.

MODE P-GPS
OFF
Safe to Fly (GPS)
H: 2M V.S
D: 39M H.S
1.2M
0
8.3 M/S
24.2 M/S

Remote Control Calibration
Stick Mode
Default stick mode is Mode 2, changing stick modes alters the way the aircraft is controlled. Do not change unless familiar with your new mode.
C1 Gimbal Pitch/Yaw C2 Reset gimbal yaw
You can customize the C1 and C2 buttons on the back of the remote controller.

Press C1 or C2 button to switch from pitch mode to yaw mode. You may use the gimbal dial to pan the gimbal under yaw mode. Press C1 or C2 again to exit yaw mode.

ISO 100
1/320
EV 0 4821
JPEG
00:22:16
4K 30

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Gimbal and Camera
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INSPIRE 1 User Manual Gimbal Operation Modes

Three Gimbal operation modes are available. Switch between the different operation modes on the Camera page of the DJI Pilot App. Note that your mobile device must be connected to the remote controller for changes to take effect. Refer to the table below for details:

Pitch
Follow Mode FPV Mode
Free Mode Re-alignment
Pan

The angle between Gimbal's orientation and aircraft's nose remains constant at all times. One user alone can control the pitch motion of the Gimbal, but a second user is required to control the pan motion using a second remote controller.

The Gimbal will lock to the movements of the aircraft to provide a First- Person-View flying experience.

The Gimbal's motion is independent of the aircraft's orientation. One user alone can control the pitch motion of the Gimbal, but a second user is required to control the pan motion using a second remote controller.

Tap to force the Gimbal orientation to re-align with aircraft's orientation by panning from gimbal's current orientation. Pitch angle will remain unchanged during the re-alignment.

Gimbal and Camera

Gimbal motor error may occur in these situations: (1) Gimbal is placed on uneven ground. (2) Gimbal has received an excessive external force, e.g. a collision. Please take off from flat, open ground and protect the gimbal after powering up.

Flying in heavy fog or cloud may make the gimbal wet, leading to a temporary failure. The gimbal will recover when it dries out.

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DJI Pilot App

This chapter describes the four main GUI of the DJI Pilot app.

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United States
Mountian View
Shot with DJI INSPIRE 1
CAMERA MAP ACADEMY USER CENTER
MODE P-GPS

CL Safe to Fly (GPS)
ISO 100
1/320 EV 0
4821 00:22:16
JPEG 4K 30
H: 2M
V.S
8.3 M/S
D. 39M
H.S
24.2 M/S 1.2M
0   00

DJI Pilot App

The DJI Pilot app is a new mobile app designed specifically for the Inspire 1. Use this app to control the gimbal, camera and other features of your flight system. The app also comes with Map, Store a User Center, for configuring your aircraft and sharing your content with friends. It is recommended that you use a tablet for the best experience.

Camera

The Camera page contains a live HD video feed from the Inspire 1's camera. You can also configure various camera parameters from the Camera page.

[1]
[2]
[3]
[4]
[5] [6]
[7]
[8]
[18]
[17] [16]
[15] [14]
[13]
[9]
[10]
[11]

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[12]

DJI Pilot App

INSPIRE 1 User Manual

[1] Flight Mode

: The text next to this icon indicates the current flight mode.

Tap to enter MC (Main Controller) settings. Modify flight limits, perform compass calibration, and set the gain values on this screen.

[2] GPS Signal Strength

: This icon shows the current strength of GPS signals. Green bars indicates adequate GPS strength.

[3] IOC Settings

: This icon shows which IOC setting that the aircraft has entered when in F Mode.

Tap to enter IOC setting menu and select Course Lock, Home Lock or Point of Interest Lock.

[4] System Status

: This icon shows current aircraft system status, such as GPS signal health.

[5] Battery Level Indicator

: The battery level indicator dynamically displays the battery level. The color zones on the battery level indicator represent different battery levels.

[6] Remote Controller Signal

: This icon shows the strength of remote controller signal.

[7] HD Video Link Signal Strength

: This icon shows the HD video downlink signal strength between the aircraft and the remote controller.

[8] Battery Level

: This icon shows the current Intelligent Flight Battery level.

Tap to enter battery information menu, set the various battery warning thresholds and view the battery warning history in this page.

[9] General Settings

: Tap this icon to enter General Settings page. Select parameter units, reset the camera, enable the quick view feature, adjust the gimbal roll value and toggle flight route display on this page.

[10] Camera Operation Bar Exposure Lock

: Tap to enable or disable the camera exposure lock.

Function

: Tap to adjust camera settings, such as video format and digtial filters.

Shutter

: Tap this button to take a single photo.

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DJI Pilot App

0m

INSPIRE 1 User Manual Record

: Tap once to start recording video, then tap again to stop recording. You can also press the Video Recording Button on the remote controller, which has the same function.

Playback

: Tap to enter playback page. You can preview photos and videos as soon as they are captured.
Camera Settings and Shooting Mode
: Tap to enter the Camera Settings page and switch from camera shooting mode from manual to auto.
[11] Map
Display the flight path of the current mission. Tap to switch from the Camera GUI to the Map GUI.
[12] Vision Positioning
: This icon shows the distance between the surface and the Vision Positioning System's sensors.
[13] Flight Telemetry
Vision Positioning Status
Icon is highlighted when Vision Positioning is in operation.
Flight attitude is indicated by the flight attitude icon.
(1) The red arrow shows which direction the aircraft is facing.
(2) Light blue and dark blue areas indicate pitch.
(3) Pitching of the boundary between light blue and dark blue area shows roll angle.
[14] Home Point Settings
: Tap this button to reset the current home point. You may choose to set the aircraft take-off location, the remote controller's current position, or the aircraft's current position as the Home Point.
[15] Return to Home (RTH)
: Initiate RTH home procedure. Tap to have the aircraft return to the latest home point.
H: 2M v.s
D: 39M H.S
1.2M
8.3 M/S
24.2 M/S

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DJI Pilot App
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[16] Gimbal Operation Mode
Refer to "Gimbal Operation Mode" P38 for more information.
[17] Auto Takeoff/Landing
/   : Tap to initiate auto takeoff or landing.
[18] Back
: Tap to return to the main GUI.

Map

User can view the current flight route in a larger map view in this page. You can also perform Auto take- off and Landing in the page. Ensure your mobile device has access to the Internet. Due to the map data required, Wi-Fi connection is recommended. Internet access is required to cache the map, if Wi-Fi is unavailable, mobile data service is required.

Academy

Download user manual, view online videos. Also you can use the flight simulator to practice your flight skills.

User Center

You can sync the picture and videos to the mobile device, view the flight records and check your DJI account status in the User Center. Use the DJI registered account to login to the User Center.

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DJI Pilot App

Flight

This chapter describes the flight safety and flight restrictions.

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Flight

Once pre-flight preparation is complete, it is recommended to use the flight simulator to learn how to fly safely. Ensure that all flights are carried out in a suitable location.

Flight Environment Requirements

1. Do not use the aircraft in severe weather conditions. These include wind speed exceeding 10m/s , snow, rain and smog.
2. Only fly in open areas. Tall buildings and steel structures may affect the accuracy of the on-board compass and GPS signal.
3. Avoid from obstacles, crowds, high voltage power lines, trees or bodies of water.
4. Minimize electromagnetic interference by not flying in area with high levels of electromagnetism, including mobile phone base stations or radio transmission towers.
5. Aircraft and battery performance is subject to environment factor such as air density and temperature.
Be very careful when flying 14700 feet (4500 meters) or more above sea level as battery and aircraft performance may be reduced.
6. The Inspire 1 cannot operate within the polar areas in "P" mode.

Flight Limits and Flight Restriction Area

Flight limits on height and distance can be set. The details of these flight limits are described in the following section.

All unmanned aerial vehicle (UAV) operators should abide by all regulations from such organizations as the ICAO (International Civil Aviation Organization), FAA and their own national 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 limits, distance limits and No Fly Zones.

When operating in P Mode, height, distance limits and No Fly Zones work together to manage flight. In A mode only height limits work and flights cannot go higher than 120 meters.

Max Height & Radius Limits

Max Height & Radius limit flying height and distance, and the user may change these settings in the DJI Pilot App. Once complete, your Inspire 1 will fly in a restricted cylinder that is determined by these settings. The tables below show the details of these limits.

Max Height
Max Radius Home Point
Height of aircraft when powered on
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Flight
GPS Signal Strong   Blinking Green
Max Height
Flight altitude must be under the set height.
Warning: Height limit reached.
None.
GPS Signal Weak   Blinking Yellow
Flight Limits
DJI Pilot App
Max Height
Flight height restricted to 120m and under.
Warning: Height limit reached.
None.
No limits

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Max Radius
Flight Limits
Flight distance must be within the max radius.
DJI Pilot App
Warning: Distance limit reached.
Aircraft Status Indicator
Rapid red flashing when close to the
max radius limit.
Aircraft Status Indicator
Max Radius
If you fly out of the limit, you can still control the Inspire 1, but cannot fly it further.
If the Inspire 1 flies out of the max radius in Ready to Fly (non-GPS) mode, it will fly back within range automatically.

Flight Restriction of Restricted Areas

Restricted areas include airports worldwide. All restricted areas are listed on the DJI official website at http://www.dji.com/fly-safe/category-mc. Restricted areas are divided into category A and category B. Category A areas cover major international airport such as LAX and Heathrow, while category B areas includes smaller airports.

Category A Safety Zone

(1) The category A "safety zone" is comprised of a small "no-fly zone" and a range of "restricted- altitude zones". Flight is prevented in the "no-fly zone" but can continue with height restrictions in the restricted-altitude zone.

(2) 1.5 miles (2.4 km) around a designated safety zone is a no-fly zone, inside which takeoff is prevented.

(3) 1.5 miles (2.4 km) to 5 miles (8 km) around restricted areas are altitude restricted, with maximum altitude going from 35 feet (10.5 m) at 1.5 miles (2.4 km) to 400 feet (120 m) at 5 miles (8 km).

(4) A "warning zone" has been set around the safety zone. When you fly within 320 feet (100m) of the safety zone, a warning message will appear on the DJI Pilot App.

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Flight
INSPIRE 1 User Manual
Category B Safety Zone

(1) Category B "safety zone" is comprised of a "no-fly zone" and a "warning zone".

(2) 0.6 miles (1 km) around the safety zone is a designated "no-fly zone".

(3) A "warning zone" has been set around the safety zone. When you fly within 0.6 miles (1Km) of this zone, a warning will appear on the DJI Pilot App.

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Flight
GPS Signal Strong Blinking Green

Zone
Restriction
DJI Pilot App Prompt
Aircraft Status Indicator
No-fly Zone
Motors will not start.
Warning: You are in a No-fly zone. Take off prohibited.
Red flashing
If the aircraft enters the restricted area in A mode but P mode activates the aircraft will automatically descend to land then stop its motors after landing.
Warning: You are in a No-fly zone, automatic landing has begun. (If you are within 1.5 mile radius)
Restricted- altitude flight zone
If the aircraft enters the restricted area in A mode but P mode activates, it will descend to a safe altitude and hover 15 feet below the safe altitude.
Warning: You are in a restricted zone. Descending to safe altitude. (If you are between the range of 1.5 mile and 5 mile radius)
Warning: You are in a restricted zone. Max flight height restricted to between 10.5m and 120m. Fly Cautiously.
Warning zone
No flight restriction applies, but there will be warning message.
Warning: You are approaching a restricted zone, Fly Cautiously.
Free zone
No restrictions.
None.
None.
INSPIRE 1 User Manual
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.
When flying in the safety zone, aircraft status indicator 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.
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.
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Flight

Preflight Checklist
1. Remote controller, aircraft battery, and mobile device are fully charged. 2. Propellers are mounted correctly and firmly.
3. Micro-SD card has been inserted if necessary.
4. Gimbal is functioning as normal.
5. Motors can start and are functioning as normal. 6. DJI Pilot app connected to the aircraft.

Calibrating the Compass
IMPORTANT: Make sure to calibrate the compass in every new flight location. The compass is very sensitive to electromagnetic interference, which can cause abnormal compass data leading to poor flight performance or even failure. Regular calibration is required for optimum performance.
DO NOT calibrate your compass where there is a chance of strong magnetic interference, such as magnetite, parking structures, and steel reinforcements underground.
DO NOT carry ferromagnetic materials with you during calibration such as keys or cellular phones.
DO NOT calibrate beside massive metal objects.
Calibration Procedures
Choose an open space to carry out the following procedures.
1. Ensure the compass is calibrated. If you did not calibrate the compass in the Checklist, or if you
have changed your position since last calibrating it, tap "MODE" in the app and select "Compass
Calibration" to calibrate the compass. Then follow the on-screen instructions.
2. Hold and rotate the aircraft horizontally 360 degrees, and the Aircraft Status Indicator will display a
solid green light.
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User Manual
Flight
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3. Hold the aircraft vertically with nose pointing downward, and rotate it 360 degrees around the center
axis. Recalibrate the compass if the Aircraft Status Indicator show solid red.
Flight
If the Aircraft Status Indicator blinks red and yellow after the calibration, move your aircraft to a different location to carry out compass calibration.

Calibrate the compass before each flight. Launch DJI Pilot App, follow the on-screen instruction to calibrate the compass.

When to Recalibrate

1. When compass data is abnormal, and the Aircraft Status Indicator is blinking red and yellow.
2. When flying in a new location, or a location that is different from your last flight.
3. When the mechanical structure of the Inspire 1 has changed, i.e. changed mounting position of the
compass.
4. When severe drifting occurs in flight, i.e. the Inspire 1 does not fly in straight lines.

Auto Take-off and Auto Landing

Auto Take-off

Use auto take-off to take off your aircraft automatically if the Aircraft Status Indicator displays blinking green. Follow the steps below to use auto take-off:

1. Launch DJI Pilot app, enter "Camera" page.
2. Ensure the aircraft is in "P" mode.
3. Go through the pre-flight checklist.
4. Tap" ", and confirm flight condition. Slide to confirm and take-off.
5. Aircraft takes off and hovers at 1.5 meters above ground.

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Auto-Landing

Use auto-landing to land your aircraft automatically if the Aircraft Status Indicator displays blinking green. Follow the steps below to use auto-landing:

1. Ensure the aircraft is in "P" mode.
2. Check the landing area condition before tapping " ", to perform landing.
3. Aircraft lowers the landing gear and proceed to land automatically.

Starting/Stopping the Motors Starting Motors

A Combination Stick Command (CSC) is used to start the motors instead of simply pushing the stick up. Push both sticks to their bottom corners to start the motors. Once the motors have spun up, release both sticks simultaneously.

Stopping Motors

There are two methods to stop the motors.
Method 1: When the Inspire 1 has landed, push the throttle down , then conduct CSC . Motors will stop immediately. Release both sticks once motors stop.
Method 2: When the aircraft has landed, push the throttle down and hold. The motors will stop after 3 seconds.

Flight Test

Take off/Landing Procedures

1. Place the aircraft on open, flat ground with battery indicators facing towards you.
2. Power on the remote controller and your mobile device, then the Intelligent Flight Battery.
3. Launch the DJI Pilot App and enter the Camera page.
4. Wait until the Aircraft Indicator blinks green. This means the Home Point is recorded and it is safe to fly
now. If it flashes yellow, it means Home Point is not recorded, and you should not take off.
5. Push the throttle up slowly to take off or using Auto Take-off to take off.
6. Shoot photos and videos using the DJI Pilot app.
7. To land, hover over a level surface and gently pull down on the throttle slowly to descend.
8. After landing, execute the CSC command or hold the throttle at its lowest position for 3 seconds or
more until the motors stop.
9. Turn off the Intelligent Flight Battery first, followed by the Remote Controller.

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Flight

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When the Aircraft Status Indicator blinks yellow rapidly during flight, the aircraft has entered Failsafe mode.
A low battery level warning is indicated by the Aircraft Status Indicator blinking red slowly or rapidly during flight.
Watch video tutorials about flight for more flight information.

Video Suggestions and Tips

1. Work through the checklist before each flight.
2. Select desired gimbal working mode in the DJI Pilot app.
3. Aim to shoot when flying in P mode only.
4. Always fly in good weather, such as sunny or windless days.
5. Change camera settings to suit you. These include photo format and exposure compensation. 6. Perform flight tests to establish flight routes and scenes.
7. Push the sticks gently to make aircraft movements stable and smooth.

Flight

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Edward Youn, owner of Jason Youn Photography LLC Phoenix AZ - Section 333 Exemption Petition

FAQ

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Troubleshooting (FAQ)

1. How can I put a GoPro camera on the Inspire 1?
The Inspire 1 does not currently support GoPro attachments. The gimbal is designed to hold DJI cameras only.
2. When will ground station functionality be available?
The Inspire 1 does not currently support ground station. Ground station will be available with future firmware updates.
3. Is the camera's exposure automatic?
The exposure can be set to Auto, for automatic changes, or Manual, if you wish to use a specific setting.
4. Can I see the size of images through the app?
Yes, you can preview image or video sizes through the DJI Pilot app.
5. How much weight can the Inspire 1 carry without its included camera?
We do not recommend flying with any payload other than the included DJI gimbal and camera.
6. Do you have an LCD monitor available for the Inspire 1?
No, DJI does not sell LCD or HD monitors for the Inspire 1. However, you can output the live streaming video to a compatible monitor or mobile device of your own.
7. How long does it take to charge the battery? Does it comes with a charger?
Yes, all Inspire 1 units come with standard TB47 charger.
With the standard TB47 100W charger, it takes 85min to fully charge a 4500mAh battery.
8. Are the two remote controllers the same? Should I setup the remote controllers in the app or somewhere else to control the camera and aircraft separately?
The two remote controllers are physically identical. You can set the remote controllers to either "Master" or "Slave" through the DJI Pilot app if you wish to use dual controller mode.
9. Where can I find info on the simulation application that plugs into the trainer port? Can you suggest a simulation program?
There is no trainer port on the remote controller for the Inspire 1.
10. Can the mobile device holder be used on the Phantom 2 series remote controller?
No, it cannot. The mobile device holder can only be used with the Inspire 1 remote.
11. Does the Inspire 1 have a SD card included?
The Inspire 1 comes with a 16GB micro-SD card. It supports SD cards up to 64GB.
12. Can I upgrade and buy a second remote controller if I only buy a single remote controller now?
Yes.
13. How big is the Inspire 1?
Its length x height x width dimensions without the propellers attached are 44 x 30 x 45cm (17.3 x 11.8 x 17.7in).
FAQ

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14. What flight controller does the Inspire 1 use?
The Inspire 1 uses its own new flight controller.
15. Which motors and propellers does the Inspire 1 come with?
The Inspire 1 uses 3510 motors and 1345 propellers.
16. Aircraft frame arm joints appear loosen, is that normal?
The space of the joins shown in the below figure is normal and it will not affect the performance of aircraft, do not adjust the position of the screws on your own.
17. Failed to complete self-check?
Place the aircraft on the flat surface before powering on. Do not move the aircraft during the self- check.
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Appendix

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Appendix

Specifications
Model
Hovering Accuracy (P Mode)
Max Tilt Angle
Max Descent Speed
Max Flight Altitude
Max Flight Time
Propeller Model
Operating Temperature Range Dimensions
Model

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Operating Current
Mounting
Mechanical Range
T600
Vertical: 0.5 m Horizontal: 2.5 m
35°
4 m/s
4500 m
Approximately 18 minutes
DJI 1345
-10° to 40° C
438x451x301 mm
ZENMUSE X3
Station: 750 mA;Motion: 900 mA Detachable
Pitch: -125° to +45° Pan: ±330°
Aircraft
Weight (Battery Included)
2935 g
Max Angular Velocity
Pitch: 300°/s Yaw: 150°/s
Max Ascent Speed
5 m/s
Max Speed
22 m/s (ATTI mode, no wind)
Max Wind Speed Resistance
10 m/s
Motor Model
DJI 3510
Indoor Hovering
Enabled by default
Diagonal Distance
559 to 581 mm
Gimbal
Output Power (With Camera)
Static: 9 W;In Motion: 11 W
Angular Vibration Range
±0.03°
Controllable Range
Pitch: -90° to +30° Pan: ±320°
Max Controllable Speed
Pitch: 120°/s Pan: 180°/s

Appendix
Camera
Model
FC350
Effective Pixels
12.4M
ISO Range
100-3200 (video) 100-1600 (photo)
FOV (Field Of View)
94°
Lens
20mm (35mm format equivalent) f/2.8 focus at) 9 Elements in 9 groups
Anti-distortion
Video Recording Modes
UHD (4K): 4096x2160p24/25, 3840x2160p24/25/30 FHD: 1920x1080p24/25/30/48/50/60
HD: 1280x720p24/25/30/48/50/60
Supported File Formats
FAT32/exFAT
Photo: JPEG, DNG
Video: MP4/MOV (MPEG-4 AVC/H.264)
Operating Temperature Range
0° to 40° C
Remote Controller
Operating Frequency
922.7MHz~927.7 MHz (Japan Only) 5.728~5.850 GHz;2.400~2.483 GHz
EIRP
10dBm@900m, 13dBm@5.8G, 20dBm@2.4G
Power Supply
Built-in battery
Dual User Capability
Host-and-Slave connection
INSPIRE 1 User Manual
Name
Total Pixels
Image Max Size Electronic Shutter Speed CMOS
Still Photography Modes

Max Bitrate Of Video Storage
Supported SD Card Types
Name
Transmitting Distance Video Output Port Charging
X3
12.76M
4000x3000
8 s to 1/8000 s Sony EXMOR 1/2.3"
Single shoot
Burst shooting: 3/5/7 frames
Auto Exposure Bracketing (AEB): 3/5 bracketed frames at 0.7EV Bias
Time-lapse
60 Mbps
SD/SDHC/SDXC Micro SD
Max capacity: 64 GB. Class 10 or UHS-1 rating required.
C1
2 km (Outdoor And Unobstructed) USB, Mini-HDMI
DJI charger

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Appendix
Mobile Device Holder Operating Temperature Range
Charging Temperature Range
Model
Rated Power Name Capacity Battery Type Net Weight
Storage Temperature Range
Max Charging Power Name
Capacity
Battery Type
Net Weight
Storage Temperature Range
Tablet or Smart Phone -10° to 40° C
0-40° C
A14-100P1A
100 W
Intelligent Flight Battery
4500 mAh
LiPo 6S High voltage battery
570 g
Less than 3 months: -20° to 45° C More than 3 months: 22° C to 28° C
180 W
Intelligent Flight Battery 5700 mAh
LiPo 6S
670 g
Less than 3 months: -20 to 45° C More than 3 months: 22° to 28° C

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User Manual
Output Power
9W
Storage Temperature Range
Less than 3 months: -20° to 45° C More than 3 months: 22° to 28° C
Battery
6000 mAh LiPo 2S
Charger
Voltage
26.3 V
Battery (Standard)
Model
TB47
Voltage
22.2 V
Energy
99.9 Wh
Operating Temperature Range
-10° to 40° C
Charging Temperature Range
0° to 40° C
Battery (Optional)
Model
TB48
Voltage
22.8 V
Energy
129.96 Wh
Operating Temperature Range
-10 to 40° C
Charging Temperature Range
0° to 40° C

Edward Youn, owner of Jason Youn Photography LLC Phoenix AZ - Section 333 Exemption Petition

Appendix
Vision Positioning
Altitude Range
5-500 cm
Operating Range
0-250 cm
DJI Pilot App
Supported Mobile Devices
* iPhone 6 Plus, iPhone 6, iPhone 5S, iPad Air 2, iPad Mini 3, iPad Air, iPad Mini 2, iPad 4;* Samsung Note 3, Samsung S5, Sony Z3 EXPERIA;* Note: It is recommended that you use a tablet for the best experience
Course Lock (CL)
Its forward direction is pointing to the nose direction when recording, which is fixed until you re-record it or exit from CL.
Point of Interest (POI)*
Point of Interest. Record a point of interest (POI), the aircraft can circle around the POI, and the nose always points to the POI.
Modes IOC
GPS enabled
GPS
Flight Distance Limits
Home Lock
Yes
Aircraft ≥10m Home Point
INSPIRE 1 User Manual Max Charging Power
Velocity Range Operating Environment
Mobile Device System Requirements
180 W
Below 8 m/s (2 m above ground) Brightly lit (lux > 15) patterned surfaces
iOS version 7.1 or later;Android version 4.1.2 or later

Intelligent Orientation Control (IOC)

IOC allows users to lock the orientation of aircraft in different fashions. There are three working modes for IOC and you may select the desired IOC modes from the DJI Pilot app. IOC only works under F mode, and user must toggle the flight mode switch to "F" mode to activate IOC. Refer to the table below:
Home Lock (HL)*
Record a Home Point (HP), and push Pitch stick to control the aircraft far from or near to the HP.
*Home Lock and Point of Interest feature are coming soon.
Prerequisites of IOC
Use the IOC feature under the following condition: Course Lock No None
POI Yes
Using IOC
Aircraft
None
5m~500m Point of Interest
Enable the IOC feature by tapping "Enable IOC" in the setting page of the DJI Pilot app. Toggle the Flight Mode Switch to "F" mode and follow the on-screen instruction to use IOC feature.

Appendix
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How to Update Firmware

Follow the steps below to upgrade your Inspire 1's firmware, including the firmware for the remote controller and battery.
Updating the Aircraft Firmware
Step 1- Check Battery and SD Card Capacity
Ensure the Intelligent Flight Battery and Remote Controller have at least 50% power and there is at least 100MB of free space on the SD card.
Step 2- Prepare the Firmware Update Package
1. Download the firmware update package from the official DJI website (http://www.dji.com/product/ inspire-1).
2. Insert the SD into your PC. Extract the all downloaded files into the root directory of the SD card. Remove the SD card from your PC and insert it into the SD card slot on the Inspire 1 camera.
Step 3- Update the Aircraft
1. Connect your mobile device to the remote controller, power on the remote controller, and launch the DJI Pilot app to obtain information about firmware update progress. Confirm you wish to update within the app to continue. Note the upgrade will begin automatically after power cycling the aircraft if the DJI Pilot app is not launched.
2. It will take approximately 25 minutes to complete the firmware update. During the upgrade process, DJI Pilot app will display update progress and gimbal will sound a fast beeping sound(D-D-D-D). A message windows of "Upgrade Completed, Aircraft will restart in 5 seconds" will prompt in DJI Pilot app and gimbal will sound a slow beeping sound (D--DD) to indicate the update is

complete, aircraft will then restart automally. Note that user will need to manually power cycle the aircraft if DJI Pilot app is not launched prior to the upgrade.

3. Try update again if gimbal sounds a long beeping sound.

Updating the Remote Controller Firmware

Step 1- Check Battery

The remote controller firmware is included in the aircraft firmware update package. Use the same update file that is downloaded from the official DJI website. Ensure the remote controller's remaining battery level is at least 50%.

Step 2- Prepare the Firmware Update Package

1. Extract all downloaded files into the root directory of an SD card or USB thumb drive.

2. With the remote controller powered off, insert the SD card into a SD card reader and plug the reader into the USB port on the remote. Or if using a USB thumb drive, plug it directly into the remote's USB port. If you do not have a SD card reader or USB thumb drive, you may insert the SD card into the
gimbal and connect the gimbal to the remote controller with a USB cable.

Step 3- Update the Remote Controller

1. Power on the remote controller and wait 60 seconds until the upgrade begins. Do not power off the remote controller during the update.

2. It will take approximately 10 minutes to complete the firmware update. The Inspire 1's camera will emit a beeping sound and the Status LED on the remote controller will show a solid blue light to indicate

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the update is in progress. The Status LED on the remote controller will show a solid green light and the beeping sound will stop when the upgrade is complete. The Status LED on the remote controller will show a solid red light if the upgrade fails. In this case, try the update again.

Updating Intelligent Flight Battery Firmware

The Intelligent Flight Battery's firmware is updated during the aircraft firmware update process. Simply keep the update package files on your SD card and update the Intelligent Flight Battery firmware if prompted in the DJI Pilot app. The update will start automatically if the aircraft is not connected to the DJI Pilot app after power cycling the aircraft.

Be sure to update the remote controller's firmware to the latest version after you upgrade the aircraft's firmware.

The remote controller may become unlinked from the aircraft after updating. Re-link the remote controller and aircraft.

Confirm the update results according to the gimbal sounds. It is normal for the aircraft to sound or the LED to blink during the update process. The on-screen rate of progress is for reference only.

Ensure there is only one firmware package file stored on your SD card.

Only storage devices that are formatted for FAT32 and exFAT file systems are supported for aircraft and remote controller firmware updates.

Delete any automatically generated txt files (xxx_GS.TXT) in the SD card when updating multiple remote controllers.

FCC Compliance FCC Compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly roved by the party responsible for compliance could void the user's authority to operate the equipment.

Compliance Information FCC Warning Message

Any Changes or modifications not expressly roved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator& your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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Appendix

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. —Consult the dealer or an experienced radio/TV technician for help.

IC RSS warning

This device complies with Industry Canada licence-exempt RSS standard (s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference,including interference that may cause undesired operation of the device.

Le présent areil est conforme aux CNR d'Industrie Canada licables aux areils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

(1) l'areil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'areil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

IC Radiation Exposure Statement:

This equipment complies with IC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.

Any Changes or modifications not expressly roved by the party responsible for compliance could void the user's authority to operate the equipment.

KCC Warning Message

"해당무선설비는 운용 중 전파혼신 가능성이 있으므로 인명안전과 관련된 서비스는 할 수 없습니다 ." "해당 무선설비는 운용 중 전파 혼신 가능성이 있음"

NCC Warning Message

低功率電波輻射性電機管理辦法 第十二條經型式認證合格之低功率射頻電機,非經許可,公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。 第十四條低功率射頻電機之使用不得影響飛航安全及干擾合法通信;經發現有干擾現象時,應改善至無 干擾時方得繼續使用。前項合法通信,指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法 通信或工業、科學及醫療用電波輻射性電機設備之干擾。

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Appendix

The content is subject to change.

www.dji.com/support

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DJI S900 Manual

Spreading Wings S900

User Manual V1.2 2014.12

Disclaimer

Thank you for purchasing the S900. Please visit the Spreading Wings S900 page on www.dji.com regularly to keep up to date with product information, technical updates and manual corrections. Information in this manual is subject to change without notice.
In using this product, you hereby agree to this disclaimer and signify that you have understood all points completely. When assembling this product, follow all instructions carefully. The manufacturer and seller assume no liability for any damage or injury arising from the use of this product.
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About

The S900 is designed for professional aerial photography and cinematography. It is user friendly, safe, stabilized and easy to fly while its integrated design makes assembly and configuration simple and fast. Retractable landing gear, vibration dampers, slightly angled arms and a minimalized gimbal mount allow for a clear 360 degree view from the camera. A patented power distribution board, built-in high-speed ESCs and motors with high efficiency propellers ensure dynamic stability and maximized power efficiency. Used with a professional DJI multi-rotor autopilot system, the S900 can hover and fly reliably making it ideal for photography and cinematography.

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305mm
433mm
126mm

Contents

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Assembly Cautions
Flight Cautions
Others

Cautions

When flying, the rotating propellers may cause serious damage and injury. Please fly safe at all times.

1. Use a bracket to mount the GPS module on the center frame to avoid interference with the power board.

2. Ensure the IMU is mounted with the arrow pointing toward the nose of the aircraft.

3. If using a receiver, attach it under the bottom board of the center frame with the end of the antenna facing downwards and away from obstructions to avoid signal loss.

4. Ensure frame arms are mounted correctly.

a) Motor mounts with CCW marks should be mounted to the center frame positions with the following marks: M1, M3 and M5.

b) Motor mounts with CW marks should be mounted to the center frame positions with the following marks: M2, M4, and M6.

5. Do not remove any glued-in screws.

6. Screws that already have blue glue can be used once without thread locker. On other occasions, apply appropriate thread locker first.

7. The S900 should be lifted off the ground when testing landing gear or recalibrating servo travel.

1. ESCs are not water-proof, please do not fly in rain or snow.

2. **Ensure all soft dampers and vibration absorbers are in good condition before every flight. If not, replace immediately. Otherwise, the flight performance of your aircraft will be adversely affected.**

3. Ensure all parts are in good condition before each flight. Do not fly with worn or broken parts.

4. Ensure propellers and motors are installed correctly and propellers are unfolded before flying.

5. Ensure ESC signal connectors and power cable connectors are tight before every flight.

6. When flying, maintain a safe distance away from people, buildings, high-voltage lines, tall trees, water and other hazards.

7. Use only 6S LiPo batteries for the power supply.

8. Ensure all output signals from M1 to M6 are in proper working order when using the DJI A2 flight control system to avoid damage or injury.

9. Do not overload the system.

10. Do not get close to or touch motors or propellers when they are spinning as this can cause serious injury. 11. Disconnect the battery and remove the camera during transportation to avoid damage or injury.

12. We strongly recommend using as many DJI manufactured parts as possible.

If you have any problems you cannot resolve, contact your dealer or DJI customer service.

Legend
Important Hints and Tips

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Cautions

In The Box
Center Frame ×1
Frame Arms ×6
In The Box
Landing Skid Tubes ×2
(with Silicone Rubber Dampers)
GPS Collapsible Mount ×1
Landing Gear Legs ×2
Springs ×2
Accessories Package ×1
CW propellers ×2
CCW propellers ×2 Magic tapes ×4
The red knobs ×6 Landing gear leg rings ×4 Soft dampers ×50
Screw Package ×1
For frame arms mount: M4×35
For landing gear mount: M3×8,
M2.5×8 (socket cap), M3×22 (socket cap)
Usage
Mounting screws.
Fastening screws.
Binding devices and wires.
Mounting receiver, controller and other modules.
Connection Cable
Connector Set ×1
3-PIN Connection Cables ×8
3-PIN Servo Cable ×1
Tools Required
Tools
2.0mm Hex Wrench, 2.5mm Hex Wrench Thread Locker

Nylon Cable Tie, Scissors, Cutting Pliers/Dykes Foam Double Sided Adhesive Tape

or

Mounting the Landing Gear

Instructions

1. Put one landing gear leg ring onto each landing gear leg.
2. Insert one landing gear leg into each landing skid tube and secure it in place by tightening the M2.5×8
(socket cap) screw. Ensure silicone rubber dampers are attached to each end.
3. Insert the landing gear leg into connection point on the center frame. Affix in place with M3×8 screws. 4. Connect both springs
on the legs to the center frame.

M2.5×8 (socket cap)

Mounting the Landing Gear

Note the springs are 58.5mm before connecting to the center frame, and are stretched to 70mm when mounting is completed.

It is recommended that the landing gear leg ring be placed about 30mm above the landing skid tube.

70mm
30mm

Mounting Frame Arms

Instructions

1. Prepare the arms.
(1) Check all propellers for cracks, then install and screw each propeller cover on tightly.
(2) Ensure all motors are mounted firmly and rotate freely.
(3) Mount all arms with red propeller covers to M1 and M2 to indicate the nose of the S900.
(4) Identify the CW and CCW marks on the arms. Mount the arms with the CCW mark to the M1, M3 and
M5 positions of the center frame. The arms with the CW mark should be mounted to the M2, M4 and M6 positions of the center frame.

Mounting Frame Arms

Screw Motor

ESC

CW or CCW Mark LED*

2. Insert each frame arm vertically into the mounting area on the center frame.
3. Line up the screw holes of the frame arm and center frame.
4. Insert the M4×35 screw from the right of the frame arm (the thread is located on the left of the screw mount). Tighten each screw correctly. Over tightening may lead to connector abrasion.

Cover Propeller

Screw Mount Power Cable ESC Signal Cable

*LED is on after motor started.

Spreading Wings S900 User Manual

5. Gently lift the frame arm.
6. Twist the red knob to lock each arm in place. Be sure there is an audible click, which indicates a proper
lock. Check the arm for movement. To store, untwist the knob and lower the frame arm.

Mounting Frame Arms

7. Now unscrew 6 screws (M2.5×8 cheese) on the upper plate of the center frame and remove the upper plate. Then unscrew the 4 screws (M3×8 self-tapping, found under the center frame) of the round cover and remove it to gain access to the ESC and power cable installation area.
8. Plug each ESC signal cable into the slot near each arm on the center frame.

Spreading Wings S900 User Manual

9. Connect the power cables to the center frame. Each cable must be screwed into a positive (+) or negative (-) gold bracket.
Each bracket will have two cables of the same color screwed into it. Red cables are positive and black cables are negative.
10. To ensure a reliable connection, rotate the screw until it is both tight and parallel to the connecting bracket.

Mounting Frame Arms

11. Ensure all ESC cables, and power cables are correctly installed onto the center frame.

ESC cables power cables

Spreading Wings S900 User Manual

12. Replace the round cover of the center plate, and re-tighten the 4 screws (M3×8 self-tapping). Then
replace the upper plate of the center frame, and re-tighten the 6 screws (M2.5×8 cheese).
13. Double check all frame arms. Arms M1 and M2 are the forward facing (nose), arms M4 and M5 are the tail. Seen from the top,
motors on arms M1, M3 and M5 rotate counter clockwise while those on arms M2, M4 and M6 rotate clockwise.

Mounting Electronics and Wiring

Eight positions are reserved for mounting a flight control system, wireless video transmission module, receiver, and other accessories. The DJI A2 flight control system has been used here as an example. If using an A2, follow mounting and wiring instructions found in the A2 flight control system user manual. If using the DJI WK-M flight control system, please refer to the WK-M user manual for connections. Also be sure the firmware on your DJI flight controller has been updated to the latest version.

Instructions

1. Attach IMU module to the IMU area of the center frame. Ensure that it points toward the nose. 2. Attach the PMU module to the center frame.

IMU

Only mount the IMU in the IMU position of the center frame.

3. Mount the flight controller in the reserved position near the PMU module.

Reserved Position

M1
M8 LINK M2
M4
M5
M6
M7
M8

F4 LED F3 F2 F1 X3 X2 X1

.12 LINK .34

.56

.78

LED .43 21 32 .1

CONTROLLER UNIT

21

ANT
CONTROLLER UNIT

Mounting Electronics and Wiring

CAN1 CAN2

CAN1 CAN2
A2 Flight Controller

11

S2 S1

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4. Attach the GPS collapsible mount to the center frame using M2.5×8 screws.

5. Mount a GPS module to the GPS mount with a bracket. Ensure the arrow points toward the nose and avoid catching your fingers in the bracket when folding for transportation.

M1 M2

6. The other reserved positions are indicated in the diagram below and can be used for mounting a receiver, LED flight indicator, iOSD module and wireless video transmission module.

Mounting Electronics and Wiring

12

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7. Check that every anti-drop screw has been firmly installed in the reserved positions. Thread locker is recommended.

(1) Remove the anti-drop screws to apply appropriate thread locker.

(2) Replace and tighten.

8. Note that the dampers are 30° silicon rubber. If you use other dampers or vibration absorbing balls, the quality of your aerial photography may be affected.

Mounting Electronics and Wiring

dampers

Mount the GPS with a bracket to avoid interference from the center frame power board.

Use glue to install the GPS bracket. Ensure it is firm and stable before every flight.

Always test motors using the Assistant Software after installation. Refer to your flight control system user manual for details.

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Spreading Wings S900 User Manual Connecting the flight controller to the center frame

1. Connect the flight control system according to your flight control system user manual. 2. Connect the flight controller to the center frame with the connection cables.

There are two kinds of connection cables. Choose the corresponding connection mode according to the connection cable in the box.

Using the connector set:

Plug in the connector set to the ESC signal outlet on the center frame. Then plug in the connector set to flight controller as shown below.

(1) Yellow 4-pin cables are for M1~ M4 connections. The yellow cable should be connected to M1. (2) Brown 4-pin cables are for M5~ M6 connections. The brown cable should be connected to M5. (3) Black 4-pin cables are for four continuous ground pins connections. M1~M4 are connected as the

following diagram shows.

M1 M2 M3 M4 M5 M6 M7 M8

M1
M2
M3
M4
M5   M6
Using the 3-pin connection cable:

M1 M2 M3 M4 M5 M6
M1 M2 M3 M4 M5 M6
M4
M$_4$
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LINK
LED
F₁F₂F₃X₁X₂

M1 through M6 correspond to each motor number.

M1
M2 M$_2$
M4 M5 M6
M$_8$
M1
M2 M$_2$
M3 M$_{M34}$
F$_2$ F$_1$
M3$_{M5}$

F$_2$ ^{X_3}F$_1$
M5
M$_{M57}$
M6M$_7$

M$_{M11}$ M$_3$
F$_4$ LED F$_3$
X$_2$
^{S_2}X$_1$ S$_1$
M6
X$_2$
x$_1$ X$_3$
M$_6$ M$_8$
LINK
LINK
CONTROLLER UNIT
LED
F$_4$ F$_3$
CONTROLLER UNIT
ANT
ANT
ANT
Mounting Electronics and Wiring
CAN1 CAN2 CAN1 CAN2
M1 M2 M3 M4 M5 M6 M7 M8
If right and left servo cables are reversed, the landing gear will not function properly.
LINK
F4
F3 F2
F₁ **1**
X3
X2 X1

Spreading Wings S900 User Manual If using a DJI WK-M flight controller, you must use the wires that came with the WK-M. M1 through
M6 correspond to each motor number.
Connecting the flight controller and landing gear
1. Connect the left servo (between M3 and M4) cable to the "L" port of the landing gear control board.
2. Connect the right servo (between M5 and M6) cable to the "R" port of the landing gear control board.
3. For the A2 flight control system, connect the F1 port of the flight controller to the "IN" port of the landing
gear control board. Other flight control systems connect a 2-position channel receiver to the "IN" port.
M1
M2 LINK M3
M4
M5
M6
M7
M8
F4 LED F3 F2
F₁**1** X3 X2 X1
S2 S1

Right Servo Connector
LED
Connect all wires carefully and neatly to avoid cable damage caused by frame edges.

S2 S1
M1

M1 M2

M2 M3

M3

M4

M5 M5

M6 M6

M1
M2 M1   M3 M4 M   M5 M6
M6
M4
IN
IN
IN
IN
R
R
L
L
Left Servo Connector
ANT
ANT
Mounting Electronics and Wiring
CAN1 CAN2
CAN1 CAN2
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Connecting XT60 Ports on the Center Frame

The bottom board is a power distribution board with three XT60 connectors for battery power.

Instructions

1. Connect the PMU power cable to the XT60 connector on top of the bottom board.

2. Connect the landing gear control board cable to the XT60 connector on the bottom of the bottom board. 3. Other connectors can supply power for other DJI devices, as required.

Installing Battery

Soldering battery connectors

AS150 spark-proof connectors are used. They must be soldered to your battery power cables.

1. Remove the original battery connectors. Avoid cutting the power and ground cables at the same time, as this can cause a short circuit. We recommend wrapping unsoldered cables with insulating tape to prevent
accidental connections.

2. Pass the black ground wire through the black housing. After passing the wire through, solder the female
bullet connector to the ground wire. Wait for the soldered connection to cool, then pull the housing back
over the bullet connector.

3. Screw and pass the red power wire through the red housing. After passing the wire through, solder the
male bullet connector to the power wire. Wait for the soldered connection to cool, and then screw and pull the housing back over the bullet connector.

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Connectors soldering diagram
USB
USB
Connecting XT60 Ports on the Center Frame / Installing Battery

Installing and connecting battery

Connectors are soldered

1. Attach battery to battery tray. Do not use an oversized battery. Maximum installation dimension is 80mm X 120mm X 200mm.

2. Connect the black connector and then the red connector to power on. Disconnect the red connector then black connector to power off.

Spreading Wings S900 User Manual
Installing Battery
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Setting Up the Landing Gear

Using a 2-position RC transmitter switch, landing gear retraction can be carried out remotely.

Setting up the transmitter

Select a 2-position switch (default setting is OK) as the control input for the landing gear. Ensure the corresponding receiver port is connected to the "IN" port on control board. For the A2 flight control system, connect the flight controller's F1 port to "IN" port on control board.

Upper: Toggle the switch to this position to raise the landing gear. Lower: Toggle the switch to this position to lower the landing gear.

Setting Up the Landing Gear

If the transmitter switch has a FailSafe function, set the FailSafe value to the [Lower] position. This ensures that the landing gear will lower automatically when the receiver enters FailSafe mode.

To avoid accidental switch triggering, slide levers or other controls can be used for landing gear control.

Usage procedures

1. Ensure transmitter and receiver batteries are fully charged.
2. Toggle the switch to the [Lower] position, and then turn on the transmitter.
3. Ensure the "R", "L" and "IN" connections are correct.
4. Ensure the landing gear is in the [Lower] position, then power on the system. If a solid green LED on the landing gear control board lights up, everything is normal. If it flashes green slowly, re-calibrate the system according to instructions in "Recalibrating Servo Travel".
5. Toggle the switch to the [Upper] position ONLY AFTER takeoff. 6. Toggle the switch to the [Lower] position for landing.

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Servo power will shut off 3 seconds after the landing gear has reached its target position.

When powering on the system, if the transmitter switch is in the [Upper] position, the LED will flash red quickly as a warning. Toggle the switch to the [Lower] position to continue.

If there is an abnormal signal or no signal input into the "IN" port, the LED will slowly flash red. Check receiver and connections for problems.

If servo power consumption is too high, the LED will light up red. If this lasts more than 4 seconds, the landing gear will lower and the LED will flash green slowly. Re-calibration is needed before flying.

A2 flight control system users can use the A2 Assistant to set intelligent gear on the "Advanced" page. Refer to the "A2 user manual" for details.

— Solid green.

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LED Control Board Indicator

Calibration required Calibration failed System calibrating Unsafe startup alert

Landing Gear Specifications

Working Voltage 3S~6S (LiPo) Working Temperature -20~70° C

Blinks rapid green. — Solid yellow.

Blinks slow yellow. Blinks rapid red.

Input Signal PWM (High-Pulse Width 800us~2200us) Output Voltage 6V

System normal

Recalibration required

Blinks slow green.

Enter calibration mode

Blinks rapid yellow.

Motor stalled

— Solid red.

Input signal abnormal

Blinks slow green.

Parameter

Range

Parameter

Range

Working Current

Max 1A@6S

Output Signal

PWM (Mid Position is 1520us) in 90Hz

Total Weight

875g

Servo Travel

150° (Minimum 120°)

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Setting Up the Landing Gear

Mounting the Gimbal

Before assembling the gimbal, install the GCU as shown below. Be sure to install on the side as shown below. A DJI Z15-GH4 (HD) gimbal has been used as an example in the following diagrams.

The connectors on gimbal should be removed for better performance, then the gimbal can be mounted to the lower connection points. Users of DJI Z15-5N / 7N gimbal, refer to the DJI Z15-5N / 7N Gimbal Mounting Notes (Page 21) for details.

Mounting the Gimbal

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Spreading Wings S900 User Manual Check that the system's center of gravity is on the line as shown in the diagram below.

Mounting the Gimbal

DJI Z15-5N / 7N Gimbal Mounting Notes
Due to the size restriction of the Z15-5N / 7N gimbal, users should purchase extended landing gear legs (used with Z15-5N / 7N gimbal) to avoid damage and/or failure during the self-test. Refer to the Part List Package No.34 (Page 31) for details.
Follow the Mounting the Landing Gear (Page 6) instructions to mount extended landing gear legs. Then the gimbal can be mounted as shown below.
Package No.34 is for users whose landing gear legs are 300mm. Users whose landing gear legs are 350mm have no need to purchase this part.
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ESC State
Sound
Throttle stick is not at bottom
BBBBBB...
Input voltage abnormal
BB---BB---BB---BB...
ESC State
LED
Motor rotating
Solid Red or Green On
Frame
Diagonal Wheelbase
900mm
Frame Arm Weight
(with Motor, ESC, Propeller)
316g
Center Frame Weight (with Landing Gear Mounting Base, Servos)
1185g
Motor
KV
400rpm/V

Appendix
ESC Sound
Ready
Input signal abnormal
ESC LED
Standby
Motor rotating at full throttle position
1234567--B--B B--------B--------B...
Off
Solid Yellow On
DJI ESCs are specifically designed for multi-rotors. When used with DJI autopilot systems parameters and travel ranges do not have to be calibrated.
Specifications
Frame Arm Length Center Frame Diameter
Landing Gear Size Stator Size
Max Power
358mm 272mm
460mm(Length)×450mm(Width)×360mm(Height) 41×14mm
500W
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Appendix
Spreading Wings S900 User Manual
Weight (with Cooling Fan)
158g
ESC
Working Current
Signal Frequency
Weight (with Radiators)
Foldable Propeller (1552/1552R)
Material
Weight
Flight Parameters

Takeoff Weight
Power Battery
Hovering Power Consumption Working Environment Temperature
Gain Value Settings
40A
30Hz ~ 450Hz
35g
High strength performance engineered plastics 13g
4.7Kg ~ 8.2Kg
LiPo (6S,10000mAh~15000mAh,15C(Min)) 1000W (@6.8Kg Takeoff Weight)
-10° C ~ 40° C
Working Voltage
6S LiPo
Drive PWM Frequency
8KHz
Size
15×5.2 inch
Total Weight
3.3Kg
Max Power Consumption
3000W
Hovering Time
18min (@12000mAh & 6.8Kg Takeoff Weight)
Flight Control
Basic
Attitude
Pitch
Roll
Yaw
Pitch
Roll
Vertical
A2
110%
110%
120%
220%
220%
120%
WooKong-M
160%
160%
160%
190%
190%
100%

Appendix

FAQ

Soldering the ESC
Be sure to solder the thick wires and fine wires correctly when soldering an ESC to the frame arm. Clockwise (CW) and counter clockwise (CCW) motors have a different arrangement of the colored wires.

Red Black Blue Thick wire Fine wire
Fine wire Thick wire
Solder pad Blue
Black
Red
CCW arms
CW arms

Remounting the Propellers Instructions
1. Use two M3×12.3 screws and four washers to remount propellers. 2. Apply thread locker to the thread of the propellers mount first.
3. Affix screws with 4Kg · cm (0.4N · m) torque.

Refer to original screw tensions if you are unfamiliar with torque measurements. Applying thread locker to the propeller mount first avoids getting thread locker into the holes of the plastic propeller.

Loose screws cannot be securely locked with thread locker.

GgpV
GgpV
FAQ

Propeller Precautions

Torque markers on the screws and propeller covers will give you a visual cue to check whether the propellers are loose. Check the torque markers before every flight.

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Using the Propeller Holder Instructions

1. Insert the propeller blades into the propeller holder. 2. Attach the propeller holder to the frame arm.

Assembling Motor Vibration Absorbers

A soft damper is part of the vibration absorber. Assemble soft dampers as shown below. Assembly is the same for CCW and CW propellers.

Ensure all soft dampers and vibration absorbers are in good condition before every flight. If not, replace immediately. Otherwise, the flight performance of your aircraft will be adversely affected. Before installing the soft dampers, put the copper gaskets onto the four mounting holes on the carbon plate. Then put the soft dampers into the mounting holes.

After tightening the screws, the vibration absorbers may be twisted. If this is the case, hold the motor with your thumbs under the base plate and fingers on the top carbon plate, and squeeze the plates together to make the vibration absorbers flat and parallel with the plates.

Spreading Wings S900 User Manual

FAQ

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Spreading Wings S900 User Manual ## Remounting the Landing Gear Servo

Remounting servos is not recommended as they are pre-installed.

Instructions

1. Connect the left servo cable to the "L" port of the landing gear control board.
2. Connect the right servo cable to the "R" port of the landing gear control board.
3. Press and hold the SET button using a pin then power on. You will see a yellow LED beside the SET button flashing quickly. Wait as servos complete position initialization.
4. Make sure the arm connecting to the servo is parallel to the link as shown in the following diagram.
5. Assemble the left and right servos to the left (between M3, M4) and the right (between M5, M6) parts of the landing gear. Power off.

R L IN
To right servo
To left servo
To receiver channel (To F1 port if use A2)
SET Button
LED

Recalibrating Servo Travel Instructions

Servo Connecting arm Link

1. Keep your hands away from all moving parts.
2. Ensure the "R", "L" and "IN" connections are correct.
3. Keep the whole aircraft off of the ground during calibration, as landing gear will move.
4. Press and hold the SET button using a pin while powering on, then release. An LED will flash yellow quickly. Press the SET button again. Auto calibration will begin and the LED will flash yellow slowly. DO NOT obstruct any moving parts during auto calibration.
5. During calibration, the left landing gear will raise and lower, followed by the right landing gear.
6. After calibration, both the left and right landing gears will be lowered and the LED will display a solid green light. This indicates that the landing gear is working properly.

If the LED is solid yellow after calibration, a problem has occurred. Carry out the instructions in "Remounting the Landing Gear Servo" then try again.

Avoid obstructions during calibration. If the landing gear was obstructed, recalibration will be required, per the above steps.

If the "R" and "L" servo cables are reversed, travel will not be measured correctly. Fix the connections and recalibrate the landing gear using the above steps.

Landing gear travel has been pre-calibrated. Mechanical adjustment of the gear travel is not recommended.

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After Installation

Part List

If you require a replacement part, locate the part that you wish to replace in the following tables. Then order the package that comes with the specified part. The numbering of the part is defined as follow:

S900
01-Frame Arm.02-Center Frame.03-Landing Gear

Frame Arm

M3x12.3 (hexagan)
S9012501CCW/ S9012502CW
S9012101B/ S9012201R
S9010801/ S9013501
S9010802
S9011001
M3x4.5
S9012902/ S9013002/ S9013102/ S9013202
S9012901/ S9013001/ S9013101/ S9013201
S9012301R/ S9012401G

Package No.

4

5

6

7

8 10

S9020101CCW

CW as clockwise；CCW as counter clock wise；BasBalck；RasRed；GasGreen

Part List

Name

S900 Frame Arm CCW - Black S900 Frame Arm CCW - Red S900 Frame Arm CW - Black S900 Frame Arm CW - Red

S900 Motor Damping Unit

S900 Motor Mount Carbon Board

S9010401CCWB, S9010402, S9010403, S9010404, M3×12.3 (cheese)

S9010501CCWR, S9010502, S9010503, S9010504, M3×12.3 (cheese)

S9010601CWB, S9010602, S9010603, S9010604, M3×12.3 (cheese)

S9010701CWR, S9010702, S9010703, S9010704, M3×12.3 (cheese)

S9010801, S9010802, M3×10.3 S9011001, M3×4.5

Package No.
Package Part No.
S9012102B/ S9012202R/ S9013701R/ S9013801B
S9012503
M3x10.3
S9012903/ S9013003/ S9013103/ S9013203
S9010401CCWB/ S9010402/ S9010501CCWR/ S9010502/ S9010601CWB/ S9010602/
S9010701CWR
S9012302/ S9012402
M3x12.3 (cheese)

Part No.

S9010702
S9010403/ S9010503/ S9010603/ S9010703
S9010404/ S9010504/ S9010604/ S9010704

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Spreading Wings S900 User Manual

21 S900 4114 Motor with black Prop cover

22 S900 4114 Motor with red Prop cover

23 S900 ESC with Red LED

24 S900 ESC with Green LED

25 S900 Propeller Pack

Center Frame
S9020301
M2.5x8 (cheese)
S9021502
M3x6.5 S9021501
S9020901
S9021201L
S9021203/ S9021101
S9021401

S9012101B, S9012102B, M3×4.5

S9012201R, S9012202R, M3×4.5

S9012301R, S9012302, M3×12.3 (cheese)

S9012401G, S9012402, M3×12.3 (cheese)

S9012501CCW, S9012502CW, S9012503, M3×12.3 (hexagan)

Part List

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S9021503/ S9032703
S9020302 M3x8 (self-tapping)
S9021202R
M2.5x8 (cheese) M3x6.5

Package No.

3 9 12

14 15 11

Landing Gear
M3x4.5
S9031902
S9031814 S9031815

M3x6.5 S9031901 M2.5x13
S9031604/ S9033306 S9031602/ S9033303 S9033301 S9033302 S9031603/ S9033305 S9031601/ S9033304 S9031605/ S9033307
M2.5x5
M2.5x8 (cheese) S9033308 S9033309 S9033310 S9033311
S9033312
S9031713/ S9031813
M2.5x8 (socket cap)
S9032601 S9032602 S9032603
S9032606
M3x22 (socket cap)
S9032604

Name

S900 Lock Knob

S900 Center Frame Support Pillar S900 Arm Mounting Bracket

S900 Center Frame Bottom Board S900 Center Frame Top Board

S900 Frame Arm Mounting Steel Shaft

Spreading Wings S900 User Manual S9020301, S9020302, M3×8 (self-tapping)

S9020901, M2.5×8 (cheese)

S9021201L, S9021202R, S9021203, M3×6.5

S9021401, M3×4.5 (cheese), M3×8 (self- tapping), M3×6.5, M3×5.5

S9021501, S9021502, S9021503, M3×6.5, M2.5×8 (cheese)

S9032605
S9031808
S9031809 M1.6x5 S9031810 S9031811

Part No.

S9021101

Part List

M2.5x8 (socket cap)
(1)
M2.5x10 (socket cap)
S9031812
S9031712
S9031903 M3x6.5 S9031904 S9031905
S9031701
S9030201 S9033313 S9033314
S9031801
M3x8 S9031802 S9031803 S9031804 S9031805 M2.5x8(cheese) S9031806 S9031807 M3x6.8
S9032001 S9032002

Caution!(1) Parts within the dotted box are mirrored against each other. Except for S9031814 and S9031815.

Package No.

Name

Part No.

17

S900 Retractable Module (Right)

S9031701, S9031702, S9031703, S9031704, S9031705, S9031706, S9031707, S9031708, S9031709, S9031710, S9031711, S9031712, S0031713, M1.6×5, M2.5×10 (socket cap), M2.5×8 (cheese), M2.5×5, M3×8, M3×4.5, M3×6.8

19

S900 Gimbal Damping Connecting Brackets

S9031901, S9031902, S9031903, S9031904, S9031905, M2.5×5, M3×6.5

26

S900 Landing Gear Leg

S9032601, S9032602, S9032603, S9032604, S9032605, S9032606, M2.5×8 (socket cap), M3×22 (socket cap)

33

S900 Gimbal Mounting Accessories

S9033301, S9033302, S9033303, S9033304, S9033305, S9033306, S9033307, S9033308, S9033309, S9033310, S9033311, S9033312, S9033313, S9033314, M2.5×5, M2.5×13, M2.5×8 (cheese)

Spreading Wings S900 User Manual 16 S900 Gimbal

Damping Bracket

18 S900 Retractable Module (Left)

S9031601, S9031602, S9031603, S9031604, S9031605, M2.5×5, M2.5×13

S9031801, S9031802, S9031803, S9031804, S9031805, S9031806, S9031807, S9031808, S9031809, S9031810, S9031811, S9031812, S9031813, S9031814, S9031815, M1.6×5, M2.5×10 (socket cap), M2.5×8 (cheese), M2.5×5, M3×8, M3×4.5, M3×6.8

20 S900 Landing Skid 2 S900 Battery Tray

Miscellaneous

S9032701
S9032702
S9032001, S9032002 S9030201
S9013601
S9020201
S9020202
S9020103
S9020104
S9033401

Caution: This part is used with Z15-5N / 7N gimbal.

Part List
Package No.
Name
Part No.
13 S900 Center Frame
30 S900 Complete Arm [CW-Green]
32 S900 Complete Arm [CCW-Green]
28 S900 Screw Pack
34 S900 Extended Landing Gear Leg 36 S900 Propeller Holder
38 S900 4114 Motor-Black Prop Cover

FCC Statements

Spreading Wings S900 User Manual Package 3, 9, 12, 14, 15
Package 6, 8, 10, 11, 21, 24, 25, S9013001, S9013002, S9013003
Package 4, 8, 10, 11, 21, 24, 25, S9013201, S9013202, S9013203
Assorted screws
S9033401
S9013601
S9013801B, M3×12.3 (hexagan)
29
S900 Complete Arm [CW-RED]
Package 7, 8, 10, 11, 22, 23, 25, S9012901, S9012902, S9012903
31
S900 Complete Arm [CCW-RED]
Package 5, 8, 10, 11, 22, 23, 25, S9013101, S9013102, S9013103
27
S900 GPS Holder
S9032701, S9032702, S9032703, M2.5×8 (cheese)
1
S900 Power Cord Plug
S9020101, S9020102, S9020103, S9020104
35
S900 Rubber Damper for 4114 Motor
S9013501, M3×10.3
37
S900 4114 Motor-Red Prop Cover
S9013701R, M3×12.3 (hexagan)
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Statements
User manual is subject to change without prior notice.
http://www.dji.com/product/spreading-wings-s900
You may visit DJI offical website to obtain the latest version of user manual.