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

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

July 31, 2015

Exemption No. 12265
Regulatory Docket No. FAA–2015–2115

Ms. Dannette J. Myers
Manager
Michael's Drone Photography, LLC
1850 Golden Gate Avenue
Kingman, AZ 86401

Dear Ms. Myers:

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 May 28, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Michael's Drone Photography, LLC (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial videography and photography for real estate purposes.

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 is a 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, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*, and any associated noise certification and testing requirements of part 36, is not necessary.

The Basis for Our Decision

You have requested to use a UAS for aerial data collection[1]. 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, Michael's Drone 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

[1] Aerial data collection includes any remote sensing and measuring by an instrument(s) aboard the UA. Examples include imagery (photography, video, infrared, etc.), electronic measurement (precision surveying, RF analysis, etc.), chemical measurement (particulate measurement, etc.), or any other gathering of data by instruments aboard the UA.

aerial data collection. This exemption is subject to the conditions and limitations listed below.

Conditions and Limitations

In this grant of exemption, Michael's Drone Photography, LLC is hereafter referred to as the operator.

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

1. Operations authorized by this grant of exemption are limited to the DJI 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 August 31, 2017, unless sooner superseded or rescinded.

Sincerely,

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

Enclosures

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May 28, 2015

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

Re: Exemption Request Section 333 of the FAA Reform Act and Part 11 of the Federal Aviation Regulations from 14 C.F.R. 45.23(b);14 CFR Part 21;14 CFR 61.113 (a) & (b); 13 C.F.R. 61.133(a); 91.7 (a);91.9 (b) (2);91.103(b); 91.109;91.119; 91.121; 91.151(a);91.203(a) & (b);91.405 (a); 91.407(a) (1); 91.409 (a) (2);91.417 (a) & (b).

Dear Sir(s)/Madam(s):

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 ("**Reform Act**") and 14 C.F.R. Part 11, Michael's Drone Photography, L.L.C., an Arizona limited liability company, the operator of a DJI Inspire 1 ("**UA**"), seeks an exemption from the Federal Aviation Regulations ("**FARs**") as listed and discussed below.

Michael's Drone Photography's team has flown its UAs, for recreational purposes, for hundreds of hours without incident and was recently granted a similar exemption for its DJI Inspire 1 UA. Michael's Drone Photography's UAs are equipped to take aerial videography and photography to enhance awareness for those individuals and companies unfamiliar with the geographical layout of certain areas and augment real estate listings and promote the use of certain real estate properties which provides an enhancement to academic research being performed in certain geographical areas ("**purpose**").

Michael's Drone Photography's exemption request will permit the operation of comparatively inexpensive UAs in tightly controlled, predetermined and limited airspace. This airspace will include areas away from general public, airports, heliports and vehicular traffic for community videos, and within property boundaries for real estate listing videos and photos. Currently, similar lightweight, remote controlled UAs are legally operated by unmonitored and untrained amateur hobbyists with no safety plan or controls in place to prevent catastrophic events. Michael's Drone Photography has safety protocols and controls in place to avoid and prevent public hazards as well as preventing the interference with manned aircraft which could cause a hazard or catastrophe. This acts to enhance safety protocols unique to Michael's Drone Photography's lightweight UAs being utilized specifically for real estate videography and photography. Michael's Drone Photography hope to be able to conduct aerial videography and cinematography to enhance academic community awareness and augment real estate listing photos and videos and record other information gained through permitted flight operations which may be shared with the FAA through any required FAA reports to assist with the development of future FAA protocols and safety regulations.

The use of Michael's Drone Photography's UAs for these purposes reduces the need to operate conventional aircraft, typically needed to perform these types of operations, provides an economic benefit to the business consumer as the Michael's Drone Photography UAs provides higher quality imagery at a fraction of the cost of aerial videography and photography using conventional aircraft. These savings result in not only enhanced efficiency and productivity for the affected activities but added environmental and safety benefits to the public at large.

As described more fully below, Michael's Drone Photography's requested exemption would authorize commercial operations of aerial videography and photography, using Michael's Drone Photography's UAs, which will be operated under controlled conditions at an altitude of no greater than three hundred (400) feet AGL in airspace that is limited in scope and will have automated control features. Michael's Drone Photography's UAs will also be operated by an individual who has passed an FAA approved ground training exam, if required by the FAA. As outlined below, the airspace in which Michael's Drone Photography's UAs will operate within will be disclosed to the FAA in advance to flight operation. Finally, Michael's Drone Photography's UAs will be used in lieu of comparatively hazardous operations now conducted with fixed wing and rotary conventional aircraft which should reassure the FAA that these operations will achieve at least an equivalent level or greater level of safety.

In the interest of economic efficiency and public safety, Michael's Drone Photography hereby respectfully applies for an exemption from the listed FARs to allow commercial operations of Michael's Drone Photography's UAs, so long as such operations are conducted within and under the conditions outlined herein or as may be established by the FAA as required by Section 333.

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Approval of this exemption would thereby enhance safety and fulfill the Secretary of Transportation's ("**Administrator**") responsibilities under Section 333(c) of the Reform Act to "establish requirements for the safe operation of such aircraft systems in the national airspace system."

As discussed above and more fully described below, the requested exemption would permit the operation of small, unmanned and relatively inexpensive UAs under controlled conditions in airspace that is limited and predetermined. Approval of this exemption would thereby enhance safety and fulfill the Administrator responsibilities to "...establish requirements for the safe operation of such aircraft systems in the national airspace system." Please see Section 333(c) of the Reform Act.

Additionally, the FAA has already granted a previous exemption which is essentially identical to the exemption being sought by Michael's Drone Photography. Please see FAA Exemption No. 11138.

The name and address of the applicant is:

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REGULATIONS FROM WHICH THE EXEMPTION IS REQUESTED

14 C.F.R. Part 21
14 C.F.R. 45.23(b)
14 C.F.R. 61.113(a) & (b)
13 C.F.R. 61.133(a)
14 C.F.R. 91.7(a)
14 C.F.R. 91.9(b)(2)
14 C.F.R. 91.103
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) & (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. 91.417(a) & (b)

This exemption application is expressly submitted to fulfill Congress' goal in passing Section 333(a) through (c) of the Reform Act. This law directs the Secretary of Transportation to consider whether certain unmanned aircraft systems may operate safely in the national airspace system (NAS) before completion of the rulemaking required under Section 332 of the Reform Act. In making this determination, the Secretary is required to determine which types of UAs do not create a hazard to users of the NAS or the public or pose a threat to national security in light of the following:

- The UA's size, weight, speed, and operational capability;
- Operation of the UAs in close proximity to airports and populated areas; and
- Operation of the UAs within visual line of sight ("**VLOS**") of the operator.

Reform Act § 333 (a).

Lastly, if the Secretary determines that such vehicles "may operate safely in the national airspace system, the Secretary shall establish requirements for the safe operation of such aircraft in the national airspace system." Id. §333(c) (emphasis added).[1]

The Federal Aviation Act expressly grants the FAA the authority to issue exemptions. This statutory authority by its terms includes exempting civil aircraft, as the term is defined under §40101 of the Act, that includes UAs, from the requirement that all civil aircraft must have a current airworthiness certificate.

The Administrator may grant an exemption from a requirement of a regulation prescribed under subsection (a) or (b) of this section or any sections 44702-44716 of this title if the Administrator finds the exemption in the public interest. 49 U.S.C. §44701(f). See also 49 USC §44711(a); 49 USC §44704; 14 CFR §91.203 (a) (1).

Michael's Drone Photography's UAs are rotorcraft weighing less than five (5) pounds (2.26796 Kg) including energy source(s), equipment and any payload. They operate, under normal

[1] Michael's Drone Photography interprets this provision to place the duty on the Administrator to not only process applications for exemptions under section 333, but for the Administrator to craft conditions for the safe operation of the UA, if it should be determined that the conditions set forth herein do not fulfill the statutory requirements for approval. [3] Reform Act Section 333 (b).

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conditions at a ground speed of no more than thirty (30) knots and have the capability to hover, and move in the vertical and horizontal plane simultaneously. The UAs will operate only in line of sight and within safe. Such operations will insure that the UA will "not create a hazard to users of the national airspace system or the public."[3]

Given the small size of the UAs involved and the restricted environment within which they will operate, Michael's Drone Photography falls squarely within that zone of safety (an equivalent level of safety) in which Congress envisioned that the FAA must, by exemption, allow commercial operations of UAs to commence immediately. Also due to the size of the UAs and the restricted areas in which the relevant UAs will operate, approval of the application presents no national security issue. Given the clear direction in Section 333 of the Reform Act, the authority contained in the Federal Aviation Act, as amended; the strong equivalent level of safety surrounding the proposed operations, and the significant public benefit, including enhanced safety, reduction in environmental impacts, including reduced emissions associated with allowing UAs for aerial videography and photography operations, the grant of the requested exemptions is in the public interest. Additionally, there is economic efficiency created with the use of Michael's Drone Photography's UAs as the typical cost to perform aerial videography and photography with helicopters and airplanes heavily multiplies the cost to business consumers and government agencies, including law enforcement, for the services which are to be provided by Michael's Drone Photography.

THE EXTENT AND BASIS OF THE RELIEF SOUGHT BY MICHAEL'S DRONE PHOTOGRAPHY

Michael's Drone Photography submits this application in accordance with the Reform Act, 112 P.L. 95 §§ 331-334, seeking relief from any currently applicable FARs operating that presently prevents Michael's Drone Photography from contemplated commercial video-graphic, photographic 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. Michael's Drone Photography's UAs meet the definition of "small unmanned aircraft" as defined in Section 331 and therefore the integration of Michael's Drone Photography's ultralight weight UAs is expressly contemplated by the Reform Act. Michael's Drone Photography would like to operate its ultralight 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 all real estate related UA aerial videography and photography. The Reform Act guides the Administrator in determining the types of UAs that may operate safely in our national airspace system. These considerations include: weight, size, speed and overall capabilities of the UAs; whether the UAs will be operated near airports or heavily populated areas and; whether the UAs will be operated by line of sight.[4] Each of these items is favorable to the

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grant of an exemption to Michael's Drone Photography. Michael's Drone Photography's UAs utilize four (4) counter-rotating propellers for balance, control and stability. Michael's Drone Photography's UAs are equipped with GPS and auto return safety technology. Michael's Drone Photography's UAs weigh less than five (5) pounds including camera and gimbal assembly.

[4] 112 P.L. 95 § 333 (a).

Michael's Drone Photography puts safety first when considering any UA flight. Michael's Drone Photography's small UAs are designed to hover in place via GPS and operate in less than a 24 knot (27 mph) wind. In order to increase safety plus stability and limit harm and financial loss of property, Michael's Drone Photography will not fly its UAs in winds exceeding 15 knots (17 mph). Michael's Drone Photography's established safety systems include a GPS mode that allows its UAs to hover in place when radio controls are released. Michael's Drone Photography's UAs have three modes to choose from, Michael's Drone Photography utilizes the Intelligent Orientation Control (IOC) Flight (with GPS & compass module)[5] for aerial videography and photography. This mode is the safest, most reliable and stable mode to prevent accidents and being a hazard to others. When pilot communication is lost, Michael's Drone Photography's UAs are designed to return then slowly descend to the point of takeoff. Michael's Drone Photography does not operate its UAs near airports, hospitals, police heliports or news channel heliports. Michael's Drone Photography does not operate its UAs in areas where general public is within fifty (50) to one hundred (100) yards depending on location, conditions and weather. Michael's Drone Photography's pilots and observers are constantly on alert for any manned aircraft and prepared to immediately abort and land the UA at the nearest and safest ground point in the event a manned aircraft approaches or the Michael's Drone Photography pilot or observer suspects a manned aircraft may approach the operating area of a Michael's Drone Photography UA. Michael's Drone Photography's UAs are capable of vertical and horizontal operations, and are flown only within my line of sight of the pilot. Michael's Drone Photography's UA flights generally last fifteen (15) minutes with an altitude under three hundred (300) and utilize battery power rather than combustible fuels. Michael's Drone Photography does not operate its UAs below the manufacturer's recommended minimum charge levels for operation preferring to remain well within a safe operating range to insure adequate communication between radio control and the UAs to eliminate potential for crashes, loss of control or hazard. Fully charged reserve batteries are on hand with to insure replacement for a sufficiently safe level of operation. Michael's Drone Photography operates very conservatively and does believe in taking risks that may cause a crash or that could create hazard to the public, property and manned aircraft. Michael's Drone Photography's pilots have logged numerous practice flights in order to simulate flights for future commercial use to gain familiarization with the characteristics of this specific UA's performance under different temperature and weather conditions.

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Michael's Drone Photography is extremely cautious when operating of its UAs and will not "create a hazard to users of the national airspace system or the public."[6] Given the small size and weight of Michael's Drone Photography's UAs, they fall well within Congress's contemplated safety zone when it promulgated the Reform Act and the corresponding directive to integrate UAs into the national airspace system. Michael's Drone Photography's UAs, utilized in hobby flight, has a demonstrable safety record and do not pose any threat to the general public or national security.

[5] Intelligent Orientation Control (IOC) Flight (with GPS & compass module) includes safe circle for operation, position hold, self-leveling, altitude command, GPS, return home feature, and safety control to return home or land in the event of communication interruption between RC transmitter and UAS. See Exhibit "1" – Inspire 1 User Manual.

[6] 112 P.L. 95 § 333 (b).

MICHAEL'S DRONE PHOTOGRAPHY'S REQUEST WILL BENEFIT THE PUBLIC AT LARGE

Aerial videography and photography for geographical awareness and for real estate marketing and promotion has been around for a long time through the use of manned fixed wing aircraft and helicopters. The challenge for smaller real estate companies and average landowners is that the expense related to manned videography and photography is cost prohibitive. Typically, only large businesses, large high end real estate companies and high net worth landowners are able to absorb such an enormous expense. This deprives non-luxury landowners and small revenue real estate companies from the enjoying the benefit of this valuable marketing and promotional tool. Manned aircraft pose a clear threat to the general public through potential catastrophic crashes that may occur. There are many documented events where a manned aircraft has crashed into populated areas with the size and combustibility of these manned aircraft causing large property damage, human injuries and loss of life. Michael's Drone Photography's UAs pose no such threat since size and lack of combustible fuel alleviates any of these potential threat to the public.

With the passage of the Reform Act, Congress has already proclaimed that it is in the public's interest to integrate commercially flown UAs into the national airspace system. The grant of the exemption request by Michael's Drone Photography furthers the public interest through academic and visual awareness of the geographical benefits of certain areas and by making this cost effective alternative available to small real estate companies and the average landowner. Michael's Drone Photography's ultralight UAs are battery powered and create no emissions that may harm the environment. In the unlikely event of a Michael's Drone Photography UA crash, the consequence is far less than a full size helicopter or fixed wing aircraft, which are heavy and contain combustible fuel, crashing and causing catastrophic devastation to the public.

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The public's interest is furthered as Michael's Drone Photography minimizes ecological and crash threat by permitting aerial videography and photography captured through Michael's Drone Photography's battery operated ultralight UA's. Permitting Michael's Drone Photography to immediately fly within national air space furthers not only public safety but economic growth. Granting Michael's Drone Photography's exemption request substantially furthers the economic impact for any community and for companies looking to relocate or build in a certain community as well as individuals looking to relocate to a community for career advancement through academic and geographical awareness provided by Michael's Drone Photography. In the end, the granting of this exemption to Michael's Drone Photography will serve as a benefit and stimulus to any community.

MICHAEL'S DRONE PHOTOGRAPHY'S EXEMPTION WILL NOT ADVERSELY AFFECT SAFETY AND WILL PROVIDE A LEVEL OF SAFETY AT LEAST EQUAL TO EXISTING FAA STANDARDS

Michael's Drone Photography's exemption will not adversely affect safety, as it will in fact enhance safety. Michael's Drone Photography's ability to log significant, controlled and monitored flight time in FAA controlled airspace will allow Michael's Drone Photography to contribute to the innovation and implementation of new, novel and undiscovered safety protocols for realtors that may be embraced by the NAR[2] through consistent and ongoing cooperation with the FAA. Additionally, the FAA may utilize the new safety protocols for the use of UAs in FAA controlled airspace for all industries.

Michael's Drone Photography submits the following representations of enhancements to current aerial videography and photography:

- Michael's Drone Photography's UAs weigh less than 5 pounds (2.26796 Kg) complete with the camera and gimbal assembly;
- Michael's Drone Photography will only operate its UAs below three hundred (300) feet which is well within the four hundred (400) feet ceiling having been established by the Reform Act of 2012;
- Michael's Drone Photography's UAs only operate for fifteen (15) minutes per flight;
- Michael's Drone Photography lands its UAs prior to manufacturer's recommended minimum level of battery power;

[2] National Association of Realtors, http://www.realtor.org/

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- Michael's Drone Photography's pilots operate the UAs through Visual Line of Sight only;
- Michael's Drone Photography's UAs have a GPS flight safety feature whereby the UA hovers and then slowly lands if communication with the pilot is lost;
- Michael's Drone Photography actively analyzes its flight data and other sources of information to constantly update and enhance its safety protocols;
- Michael's Drone Photography only operates in reasonably safe environments which are strictly controlled and away from power lines, elevated lights, airports and actively populated areas;
- Michael's Drone Photography conducts extensive pre-flight inspections and protocol to ensure safety remains the primary concern;
- Michael's Drone Photography always obtains all necessary permissions from the FAA and landowners prior to the operation its UAs and;
- Michael's Drone Photography has established safety procedures in place to abort flights in the event of safety breaches or any potential danger.

Michael's Drone Photography's safety protocols provide a level of safety equal to or exceeding existing FAA rules. It is important to note that absent the integration of commercial UAs into our national airspace system, manned fixed wing airplanes and helicopters are the primary means of aerial videography and photography for community awareness and real estate uses. While the safety record of such helicopters is outstanding, there have been incidents involving loss of life as well as extensive property damage due to crashes of these manned aircraft and it is far safer and less expensive to operate a battery powered Michael's Drone Photography's ultralight UAs to accomplish the same task. The potential for loss of life is great diminished with a UA as Michael's Drone Photography's UAs carry no people or fuel on board and the UAs are also very small and versatile which allows Michael's Drone Photography to avoid hazards quickly and safely.

Accordingly, Michael's Drone Photography respectfully requests that the FAA grant the requested exemption without delay.

AIRCRAFT AND EQUIVALENT LEVEL OF SAFETY

Michael's Drone Photography proposes that the exemption requested herein apply to civil aircraft that have the characteristics and that operate with the limitations listed herein. These limitations provide for at least an equivalent or even higher level of safety to operations under the current regulatory structure because the proposed operations represent a safety enhancement to the operations conducted with conventional aircraft. The FAA has noted in past exemptions that "Conventional aerial video operations, using jet or piston-powered aircraft present risks associated with aircraft that weigh in the neighborhood of 5,000 to 7,000 pounds or more, carry large

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quantities of fuel, passengers, and, in some cases, cargo. Such aircraft must fly to and from the survey location. Please see FAA Exemption 11110.

These limitations and conditions to which Michael's Drone Photography agrees to be bound when conducting all operations under an FAA issued exemption include:

1. The UAs will weigh less than five (5) pounds (2.26796 Kg).
2. Maximum total flight time for each operational flight will be fifteen (15) minutes. Flights will be terminated at thirty percent (30%) battery power reserve should that occur prior to the fifteen (15) minute limit.
3. Flights will be operated at an altitude of no more than three hundred (300) feet AGL.
4. Minimum crew for each operation will consist of the UA Pilot and a Visual Observer ("**VO**").
5. The UAs will only operate within a safe area.
6. A briefing will be conducted with regard to the planned UA operations prior to flight operations. It will be mandatory that all personnel who will be performing duties with regard to the flight operations be present for this briefing.
7. The Pilot and VO will have been trained in operation of UAs generally and received up-to-date information on the particular UA to be operated and the UA will be operated in conformity with Michael's Drone Photography's protocols.
8. The PILOT and VO will at all times be able to communicate via voice communication.
9. Written and/or oral permission from the relevant property holder(s), or their authorized representative(s), will be obtained.
10. All required permissions and permits will be obtained from territorial, state, county or city jurisdictions, including local law enforcement, fire, or other appropriate governmental agencies.
11. If the UA loses communications or loses its GPS signal, the UA will return to the launch site of the UA, or another more appropriate site, and land.
12. The UA will have the capability to abort a flight in case of unpredicted obstacles or emergencies.

14 C.F.R. PART 21, SUBPART H: AIRWORTHINESS CERTIFICATES 14 C.F.R. §91.203 (A) (1)

Subpart H, entitled Airworthiness Certificates, establishes the procedural requirements for the issuance of airworthiness certificates as required by FAR §91.203 (a) (1). Given the size and limited operating area associated with the aircraft to be utilized by Michael's Drone Photography, an exemption from Part 21 Subpart H meets the requirements of an equivalent level of safety under

Part 11 and Section 333 of the Reform Act. The Federal Aviation Act (49 U.S.C.§44701 (f)) and Section 333 of the Reform Act both authorize the FAA to exempt aircraft from the requirement for an airworthiness certificate, upon consideration of the size, weight, speed, operational capability, and proximity to airports and populated areas of the particular UA. In all cases, an analysis of these criteria demonstrates that the UA operated without an airworthiness certificate, in the restricted environment and under the conditions proposed will be at least as safe, or safer, than a conventional aircraft (fixed wing or rotorcraft) operating with an airworthiness certificate without the restrictions and conditions proposed.

The UAs to be operated hereunder is less than five (5) pounds (2.26796 Kg) fully loaded, carries neither a pilot nor passenger, carries no explosive materials or flammable liquid fuels, and operates exclusively within a secured area. Unlike other civil aircraft, operations under this exemption will be tightly controlled and monitored by both the operator, and under the requirements and in compliance with local public safety requirements, to provide security for the area of operation as is now done with conventional aerial videography and photography. Lastly, application of these same criteria demonstrates that there is no credible threat to national security posed by the UAs, due to its size, speed of operation, location of operation, lack of explosive materials or flammable liquid fuels, and inability to carry a substantial external load.

14 C.F.R. § 45.23 (B). MARKING OF THE AIRCRAFT

The regulation requires:

> When marks include only the Roman capital letter "N" and the registration number is displayed on limited, restricted or light-sport category aircraft or experimental or provisionally certificated aircraft, the operator must also display on that aircraft near each entrance to the cabin, cockpit, or pilot station, in letters not less than 2 inches nor more than 6 inches high, the words "limited," "restricted," "light-sport," "experimental," or "provisional," as applicable.

Even though the UAs will have no airworthiness certificate, an exemption may be needed as the UAs will have no entrance to the cabin, cockpit or pilot station on which the words "limited," "restricted," "light-sport," "experimental," or "provisional," may be placed. Given the size of the UAs, two-inch lettering will be impossible. The word "experimental," or any other term as is so required, will be placed on the fuselage of the UAs in compliance with §45.29 (f).

The equivalent level of safety will be provided by having the UAs marked on its fuselage as required by §45.29 (f) where the pilot, observer and others working with the UAs will see the identification of the UAs as "Experimental." The FAA has issued the following exemptions to this regulation to Exemptions Nos. 10700, 8738, 10167 and 10167A.

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14 C.F.R. § 61.113(A) & (B); 61.133(A): PRIVATE PILOT PRIVILEGES ANDLIMITATIONS; PILOT IN COMMAND; COMMERCIAL PILOT PRIVILEGES AND LIMITATIONS: PILOT IN COMMAND

Section 61.113(a) & (b) limit private pilots to non-commercial operations. Unlike a conventional aircraft that carries a pilot, passengers, and cargo, the UA in this case is remotely controlled with no passengers or property of others on board. Section 61.133(a) requires an individual with a commercial pilot's license to be pilot in command of an aircraft for compensation or hire. Michael's Drone Photography respectfully proposes that operator requirements should take into account the characteristics of the particular UA. Michael's Drone Photography's UAs have various built-in technical capabilities that strictly limit the potential for operation outside of the operating conditions set forth in the exemption application including a fly back to launch point to terminate the flight. Since hobbyists are not required to have a pilot license, Michael's Drone Photography requests exemption for the need of the pilot to be licensed as a pilot by the FAA.

- Detection of lost GPS or of insufficient satellites initiates an immediate return to launch location.
- Low power on the aircraft triggers escalating alarms at 30% and 15% levels.
- The aircraft weighs less than five (5) pounds (2.26796 Kg), fully loaded.

Given these safety features, Michael's Drone Photography proposes that operators of the UAs should only be required to hold a private pilot's license and not a commercial pilot's license.

Michael's Drone Photography notes that the FAA has found that safety factors permitted operation of UAs by operators with these qualifications in the case of operations pursuant to public COAs where the mandatory operating conditions specified above are present. Please see Federal Aviation Administration, Notice N-8900.227, Unmanned Aircraft Systems (UAS) Operational Approval, at 20-21 (July 30, 2013). The FAA has the statutory authority, granted at 49 U.S.C.§44701(f) to waive the pilot requirements for commercial operations.

Given these conditions and restrictions, an equivalent level of safety will be provided by allowing operation of Michael's Drone Photography's UAs without a commercial pilot's license, under the conditions set forth herein.

The risks associated with the operation of Michael's Drone Photography's UAs (given its size, speed, operational capabilities, and lack of combustible fuel) are so diminished from the level of risk associated with private pilot operations or commercial operations contemplated by Part 61

with conventional aircraft (fixed wing or rotorcraft), that allowing operations of the UAs as set forth above meets or exceeds the present level of safety provided under 14 C.F.R. § 61.113(a) & (b) and does not rise to the level of requiring a commercial pilot to operate the aircraft under §61.133(a).

Sections 61.113 (a) & (b) limit private pilots to non-commercial operations. Because the UAs will not carry a pilot or passengers, the proposed operations can achieve the equivalent level of safety of current operations by requiring the PILOT operating the aircraft to have a private pilot's license rather than a commercial pilot's license to operate these small UAs. Unlike a conventional aircraft that carries the pilot and passengers, the UAs are remotely controlled with no living thing on board. The area of operation is controlled and restricted, and all flights are planned and coordinated in advance. The level of safety provided by Michael's Drone Photography's exceeds that provided by a single individual holding a commercial pilot's certificate operating a conventional aircraft. The risks associated with the operation of the UAs are so diminished from the level of risk associated with commercial operations contemplated by Part 61 when drafted, that allowing operations of the UAs as requested with a private pilot as the PILOT exceeds the present level of safety achieved by 14 C.F.R. §61.113 (a) & (b).

14 C.F.R. §91.7(A): CIVIL AIRCRAFT AIRWORTHINESS

The regulation requires that no person may operate a civil aircraft unless it is in airworthy condition. As there will be no airworthiness certificate issued for the aircraft, should this exemption be granted, no FAA regulatory standard will exist for determining airworthiness. Given the size of the aircraft and the requirements for maintenance and use of safety check lists prior to each flight.

14 C.F.R. § 91.9 (B) (2): CIVIL AIRCRAFT FLIGHT MANUAL IN THE AIRCRAFT

Section 91.9 (b) (2) provides:

> No person may operate a U.S. registered civil aircraft ...
>
> (2) For which an Airplane or Rotorcraft Flight Manual is not required by §21.5 of this chapter, unless there is available in the aircraft a current approved airplane or Rotorcraft Flight Manual, approved manual material, markings, and placards, or any combination thereof.

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The UAs, given their size and configuration has no ability or place to carry such a flight manual on the aircraft, not only because there is no pilot on board, but because there is no room or capacity to carry such an item on the aircraft.

The equivalent level of safety will be maintained by keeping at the ground control point where the pilot flying the UAs will have immediate access to it. The FAA has issued the following exemptions to this regulation: Please see FAA Exemption Nos. 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, 32827, and 10700.

14 C.F.R. § 91.103: PREFLIGHT ACTION

This regulation requires each pilot in command to take certain actions before flight to insure the safety of flight. As FAA approved rotorcraft flight manuals will not be provided for the aircraft an exemption will be needed. An equivalent level of safety will be provided. The PILOT will take all actions including reviewing weather, flight battery requirements, landing and takeoff distances and aircraft performance data before initiation of flight.

14 C.F.R. §91.109: FLIGHT INSTRUCTION

Section 91.109 provides that no person may operate a civil aircraft (except a manned free balloon) that is being used for flight instruction unless that aircraft has fully functioning dual controls.

UAs and remotely piloted aircraft, by their design do not have fully functional dual controls. Flight control is accomplished through the use of a control box that communicates with the aircraft via radio communications. The FAA has approved exemptions for flight training without fully functional dual controls for a number of aircraft and for flight instruction in experimental aircraft. Please see FAA Exemption Nos. 5778K & 9862A. The equivalent level of safety is provided as neither a pilot nor passengers will be carried in the aircraft and by the size and speed of the aircraft.

14 C.F.R. §91.119: MINIMUM SAFE ALTITUDES

Section 91.119 establishes safe altitudes for operation of civil aircraft. Section 91.119(d) allows helicopters to be operated at less than the minimums prescribed, provided the person operating the helicopter complies with any route or altitudes prescribed for helicopters by the FAA. As this exemption is for UAs that are a helicopter and the exemption requests authority to operate at altitudes up to three hundred (300) feet AGL, an exemption may be needed to allow such operations. As set forth herein, except for the limited conditions, the UAs will never operate at higher than three hundred (300) feet AGL. It will however be operated in a restricted area with

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security perimeter, where buildings and people will not be exposed to operations without their pre-obtained consent.

The equivalent level of safety will be achieved given the size, weight, speed of the UAs as well as the location where it is operated. No flight will be taken without the permission of the property owner or local officials. Because of the advance notice to the property owner(s), or their authorized representative(s), all affected individuals will be aware of the planned flight operations. When one compares the flight operations proposed herein with aircraft or rotorcraft weighing far in excess of the less than five (5) pounds (2.26796 Kg) and the lack of flammable fuel, any risk associated with these proposed operations is far less than those presently presented with conventional aircraft operating at or below five hundred (500) feet AGL. In addition, the low-altitude operations of the UAs will ensure separation between these small UAs operations and the operations of conventional aircraft that must comply with Section 91.119.

14 C.F.R. §91.121 ALTIMETER SETTINGS

This regulation requires each person operating an aircraft to maintain cruising altitude by reference to an altimeter that is set "...to the elevation of the departure airport or an appropriate altimeter setting available before departure." As the UA may not have a barometric altimeter, but instead a GPS altitude read out, an exemption may be needed. An equivalent level of safety will be achieved by the operator, confirming the altitude of the launch site shown on the GPS altitude indicator before flight.

14 C.F.R. § 91.151(A): FUEL REQUIREMENTS FOR FLIGHT IN VFR CONDITIONS

Section 91.151 (a) prohibits an individual from beginning "a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing, and, assuming normal cruising speed – (1) During the day, to fly after that for at least 30 minutes; or (2) At night, to fly after that for at least 45 minutes."

Michael's Drone Photography believes that an equivalent level of safety can be achieved by limiting flights to fifteen (15) minutes or thirty percent (30%) of battery power whichever happens first. This restriction would be more than adequate to return the UAs to their planned landing zone from anywhere in its limited operating area.

Similar exemptions have been granted to other operations, including Exemptions 2689F, 5745, 10673, and 10808.

14 C.F.R. §91.203 (A) AND (B): CARRYING CIVIL

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AIRCRAFT CERTIFICATION AND REGISTRATION

The regulation provides in pertinent part:

> (a) Except as provided in § 91.715, no person may operate a civil aircraft unless it has within it the following:
>
> (1) An appropriate and current airworthiness certificate. . . .
>
> (b) No person may operate a civil aircraft unless the airworthiness certificate required by paragraph (a) of this section or a special flight authorization issued under §91.715 is displayed at the cabin or cockpit entrance so that it is legible to passengers or crew.

The UAs fully loaded weight is no greater than five (5) pounds (2.26796 Kg) and is operated without an onboard pilot. As such, there is no ability or place to carry certification and registration documents or to display them on the UA.

An equivalent level of safety will be achieved by keeping these documents at the ground control point where the pilot flying the UA will have immediate access to them to the extent they are applicable to the UA. The FAA has issued numerous exemptions to this regulation. A representative sample of other exceptions includes Exemption Nos. 9565, 9665, 9789, 9789A, 9797, 9797A, 9816A, and 10700.

14 C.F.R. §91.405 (A); 407 (A) (1); 409 (A) (2); 417(A) & (B): MAINTENANCE INSPECTIONS

These regulations require that an aircraft operator or owner "shall have that aircraft inspected as prescribed in subpart E of this part and shall between required inspections, except as provided in paragraph (c) of this section, have discrepancies repaired as prescribed in part 43 of this chapter...," and others shall inspect or maintain the aircraft in compliance with Part 43.

Given that these section and Part 43 apply only to aircraft with an airworthiness certificate, these sections will not apply to Michael's Drone Photography. Maintenance will be accomplished by the operator pursuant to the flight manual and operating handbook. An equivalent level of safety will be achieved because these small UAs are very limited in size and will carry a small payload and operate only in restricted areas for limited periods of time. If mechanical issues arise the UAs may land immediately and will be operating from no higher than three-hundred (300) feet AGL. The operator will ensure that the UAs are in working order prior to initiating flight, perform

required maintenance, and keep a log of any maintenance performed. Moreover, the operator is the person most familiar with the aircraft and best suited to maintain the aircraft in an airworthy condition to provide the equivalent level of safety.

****

Pursuant to 14 C.F.R. Part 11, the following summary is provided for publication in the Federal Register, should it be determined that publication is needed:

Michael's Drone Photography seeks an exemption from the following rules:

14 C.F.R. §21, subpart H; 14 C.F.R 45.23(b);14 C.F.R. §§ 61.113(a) & (b);91.7 (a); 91.9 (b) (2);91.103(b);91.109; 91.119; 91.121; 91.151(a);91.203(a) and (b); 91.405 (a); 91.407 (a) (1); 91.409 (a) (2); 91.409 (a) (2) and 91.417 (a) & (b) to operate commercially a small unmanned vehicle weighing less than fifty-five (55) pounds (25 Kg) in its operations.

Approval of exemptions allowing commercial operations of UAs in the purposes outlined above (or similar operations) will enhance safety by reducing risk. Conventional aerial videography and photography operations, using jet or piston power aircraft, operate at extremely low altitudes just feet from the object being photographed and often in extreme proximity to people and structures; and present the risks associated with vehicles that weigh in the neighborhood of four thousand (4,000) pounds, carrying large amounts of jet A or other fuel (one hundred and forty (140) gallons for jet helicopters). Such aircraft must fly to and from the site's location. In contrast, a UA weighing less than five (5) pounds (2.26796 Kg) pounds and powered by batteries eliminates virtually all of that risk given the reduced mass and lack of combustible fuel carried on board. The UA is carried to the site of the purposes outlined above (or similar operations) and not flown to the site. The UA will carry no passengers or crew and, therefore, will not expose them to the risks associated with manned aircraft flights.

The operation of small UAs, weighing less than five (5) pounds (2.26796 Kg), conducted in the strict conditions outlined above, will provide an equivalent level of safety supporting the grant of the exemptions requested herein, including exempting Michael's Drone Photography from the requirements of Part 21 and allowing commercial operations. These lightweight aircraft operate at slow speeds, close to the ground, and in a sterile environment and, as a result, are far safer than conventional operations conducted with turbine helicopters operating in close proximity to the ground and people.

PRIVACY

All flights will occur over private, controlled or approved property with the property owner's, or their authorized representative, prior consent and knowledge. The aerial videography

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and photography will be of structures and property whose owner, or authorized representative, has consented to the aerial videography and photography or otherwise have agreed to be in the area where aerial videography and photography will take place. The grant of this exemption request will provide improved safety in all operations.

Satisfaction of the criteria provided in Section 333 of the Reform Act of 2012 - size, weight, speed, operating capabilities, proximity to airports and populated areas and operation within visual line of sight and national security – provide more than adequate justification for the granting of the requested exemptions allowing commercial operation of Michael's Drone Photography's UAs.

SUMMARY OF MICHAEL'S DRONE PHOTOGRAPHY'S REQUEST FOR AN FAA EXEMPTION

1. Michael's Drone Photography's UAs must weigh less than five (5) pounds (2.26796 Kg), including energy source(s) and equipment. Operations authorized by the grant of an exemption are limited to the following aircraft: Michael's Drone Photography's UA aircraft variant, bearing serial #PH645210898 onward as additional UAs are utilized by Michael's Drone Photography provided the additional UAs are of the same or similar specifications as the UA bearing serial # PH645210898. Any proposed operations of any other aircraft will require a new petition or a petition to amend this grant.

2. Michael's Drone Photography's UAs may not be flown at a ground speed exceeding thirty (30) knots.

3. Michael's Drone Photography's flights must be operated at an altitude of no more than three hundred (300) feet above ground level (AGL), as indicated by the procedures. All altitudes reported to ATC must be in feet AGL.

4. Michael's Drone Photography's UAs must be operated within the VLOS of the PILOT at all times. This requires the PILOT to be able to use human vision unaided by any device other than corrective lenses.

5. All Michael's Drone Photography operations must utilize a VO. The VO may be used to satisfy the VLOS requirement as long as the PILOT always maintains VLOS capability. The VO and PILOT must be able to communicate verbally at all times.

6. Prior to each flight the PILOT must inspect the UA to ensure it is in a condition for safe flight. If the inspection reveals a condition that affects the safe operation of the UA, the aircraft is prohibited from operating until the necessary maintenance has been performed and the UA is

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found to be in a condition for safe flight. A Ground Control Station, if utilized, must be included in the preflight inspection. All maintenance and alterations must be properly documented in the aircraft records.

7. Any UA that has undergone maintenance or alterations that affect the UA's operation or flight characteristics, e.g. replacement of a flight critical component, must undergo a functional test flight. The PILOT who conducts the functional test flight must make an entry in the UA's aircraft records of the flight.

8. Michael's Drone Photography must follow the manufacturer's UA aircraft/component, maintenance, overhaul, replacement, inspection, and life limit requirements. When unavailable, aircraft maintenance/component/overhaul, replacement, and inspection/maintenance requirements must be established and identified. At a minimum, requirements for the following may be included in protocols and controls to be established by Michael's Drone Photography:

a. Actuators/Servos;
b. Transmission (single rotor);
c. Power plant (motors);
d. Propellers;
e. Electronic speed controller;
f. Batteries;
g. Mechanical dynamic components (single rotor);
h. Remote command and control;
i. Ground control station (if used); and
j. Any other components as determined by Michael's Drone Photography.

10. Prior to operations conducted for the purposes outlined above (or similar operations), the PILOT must have accumulated and logged, in a manner consistent with 14 CFR § 61.51(b), a minimum of twenty-five (25) hours of total time as a UA rotorcraft pilot (single blade or multi-rotor) and at least ten (10) hours logged as a UA pilot with multi-rotor UA which is similar to the UA to be utilized pursuant to this exemption. Prior documented flight experience that was obtained in compliance with applicable regulations may satisfy this requirement. Training, proficiency, and experience-building flights must be conducted under an exemption to accomplish the required flight cycles and flight time. During training, proficiency, and experience-building flights, all persons not essential for flight operations are considered nonparticipants, and the PILOT must operate the UA with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.

11. Prior to operations conducted for the purposes outlined above (or similar operations), the PILOT must have accumulated and logged, in a manner consistent with 14 CFR § 61.51(b), a minimum of five (5) hours as a UA pilot operating the make and model of UAs to be utilized for operations under the exemption and three (3) take-offs and three (3) landings in the preceding ninety (90) days. Training, proficiency, experience-building, and take-off and landing currency flights can be conducted under the grant of exemption to accomplish the required flight time and ninety (90) day currency. During training, proficiency, experience-building, and take-off and landing currency flights all persons not essential for flight operations are considered nonparticipants, and the PILOT must operate the UA with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.

12. Michael's Drone Photography shall not permit the PILOT to operate the UAS for the purpose of aerial videography or photography (or similar operations), unless the PILOT has demonstrated and logged in a manner consistent with 14 CFR 61.51(b), 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 people, vessels, vehicles and structures.

13. The UA may not be operated directly over any person, except authorized and consenting personnel and persons, below an altitude that is hazardous to persons or property on the surface in the event of a UA's failure or an emergency.

14. At all times, those persons must be essential to the purposes outlined above (or similar operations). Because these procedures are specific to participating persons, no further FSDO or aviation safety inspector approval is necessary for reductions to the distances specified in Michael's Drone Photography's manuals.

15. Michael's Drone Photography's 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 and/or;
b. The aircraft is operated near vessels, vehicles or structures where the owner/controller of such vessels, vehicles or structures has granted permission

and the PILOT has made a safety assessment of the risk of operating closer to those objects and determined that it does not present an undue hazard, and;

c. Operations nearer to the PILOT, VO, operator trainees or essential persons do not present an undue hazard to those persons per § 91.119(a).

16. If the UAs lose communications or loses its GPS signal, the UAs must return to a pre-determined location within the security perimeter and land or be recovered.

17. The UAs must abort the flight in the event of unpredicted obstacles or emergencies.

18. Each UA operation must be completed within fifteen (15) minutes flight time or with thirty percent (30%) battery power remaining, whichever occurs first.

19. Michael's Drone Photography must obtain an Air Traffic Organization (ATO) issued Certificate of Waiver or Authorization (COA) prior to conducting any operations under this grant of exemption. This COA will also require Michael's Drone Photography to request a Notice to Airman (NOTAM) not more than seventy-two (72) hours in advance, but not less than forty-eight (48) hours prior to the operation.

20. 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.

21. Michael's Drone Photography has developed procedures to document and maintain a record of the UA's maintenance, preventative maintenance, alterations, status of replacement/overhaul component parts, and the total time in service of the UAs.

22. Each UA operated under this exemption must comply with all manufacturer Safety Bulletins.

23. The preflight inspection section in Michael's Drone Photography's Confidential Protocols and Controls Exhibit includes the following requirement: The preflight inspection must account for all discrepancies, i.e. inoperable components, items, or equipment, not covered in the relevant preflight inspection.

24. Before conducting operations, the radio frequency spectrum used for operation and control of the UA must comply with the Federal Communications Commission (FCC) or other appropriate government oversight agency requirements.

25. The documents required under 14 CFR §§ 91.9 and 91.203 must be available to the PILOT at the Ground Control Station, if utilized, of the UA at any time the UA is operating. These documents must be made available to the Administrator or any law enforcement official upon request.

26. Michael's Drone Photography's UAs must remain clear and yield the right of way to all other manned operations and activities at all times (including, but not limited to, ultralight vehicles, parachute activities, parasailing activities, hang gliders, etc.).

27. Michael's Drone Photography's UA 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.

28. Michael's Drone Photography's UAs may not be operated by the PILOT from any moving device or vehicle.

29. Michael's Drone Photography's UAs may not be operated less than five-hundred (500) feet below or less than two-thousand (2,000) feet horizontally from a cloud or when visibility is less than three (3) statute miles from the PILOT.

30. Michael's Drone Photography's UA may not operate in Class B, C, or D airspace without written approval from the FAA. The UA may not operate within five (5) nautical miles of the geographic center of a non-towered airport as denoted on a current FAA-published aeronautical chart unless a letter of agreement with that airport's management is obtained, and the operation is conducted in accordance with a NOTAM as required by the Michael's Drone Photography's COA. The letter of agreement with the airport management must be made available to the Administrator upon request.

31. 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 UA Integration Office (AFS-80) within twenty-four (24) hours. Accidents must be reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: www.ntsb.gov.

32. Michael's Drone Photography's UAs, the UA's PILOT, and the UA's operations must comply with all applicable parts of 14 CFR including, but not limited to, parts 45, 47, 61, and 91.

Michael's Drone Photography, 1850 Golden Gate Avenue, Kingman, Arizona 86401
Phone: (928) 897-2631

As mentioned above, the FAA has already granted a previous exemption which is essentially identical to the exemption being sought by Michael's Drone Photography in this petition for an exemption. Please see FAA Exemption No. 11138.

Therefore, Michael's Drone Photography respectfully requests the FAA grant an exemption pursuant to its application as outlined above.

Sincerely,

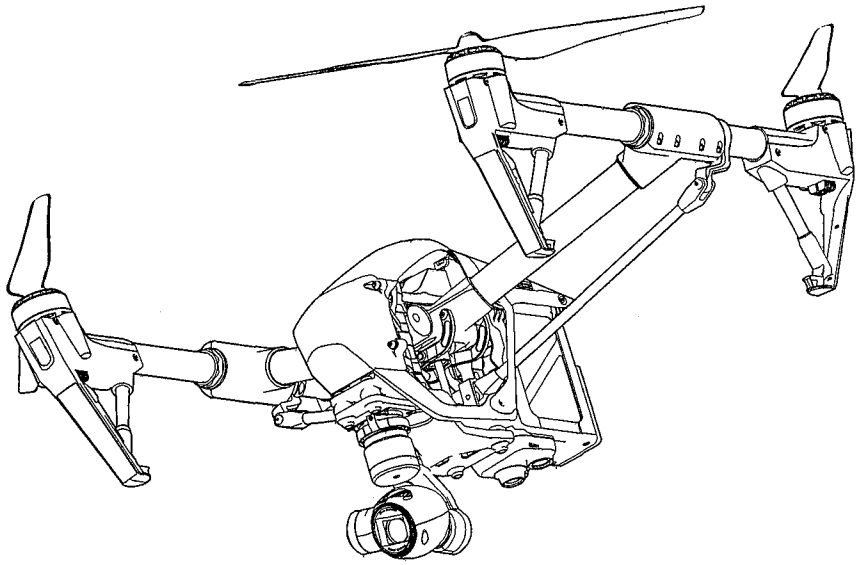
Dannette J. Myers,
Manager
Michael's Drone Photography, L.L.C.

Michael's Drone Photography, 1850 Golden Gate Avenue, Kingman, Arizona 86401
Phone: (928) 897-2631

INSPIRE 1

User Manual V1.2

2015.3



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. Requires iOS 8.0 or later.

Contents

Product Profile

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

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.

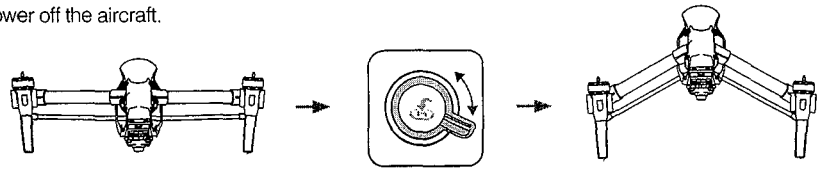
Flight Controller: The next generation flight controller system provides a more reliable flight experience. A new flight recorder stores the flight data from each flight, and Vision Positioning enhances hovering precision when no GPS is available.

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.

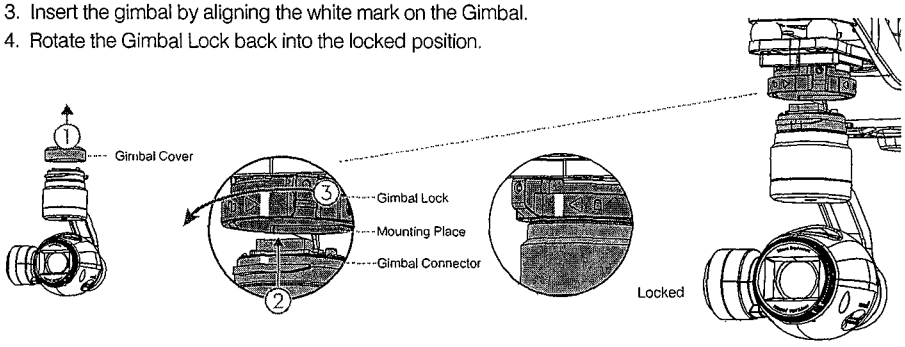


Travel Mode　　Toggle×4　　Landing Mode

⚠
- 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

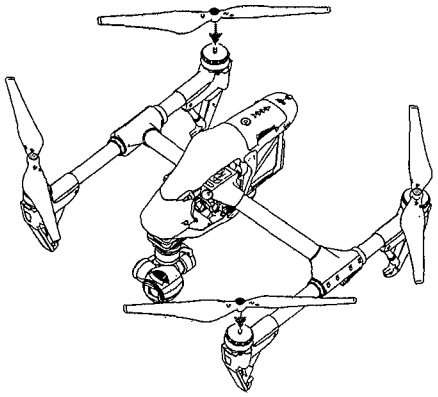
1. Remove Gimbal Cover.
2. Rotate the Gimbal Lock to the unlocked position (to the right when facing the nose of the aircraft).
3. Insert the gimbal by aligning the white mark on the Gimbal.
4. Rotate the Gimbal Lock back into the locked position.



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

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.

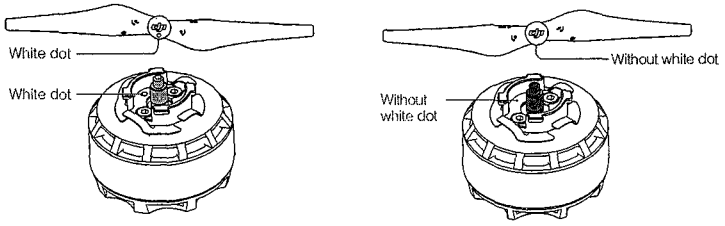


⚠ Place all propellers onto the correct motor and tighten by hand to ensure security before flight.

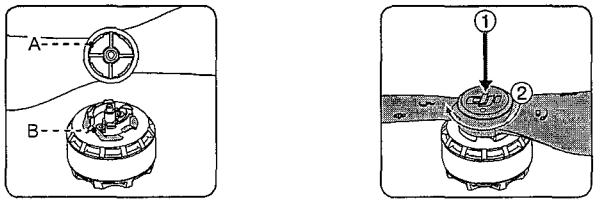
Attaching 1345s Quick-Release Propellers

The 1345s Quick-Release propeller is the upgrade version of the propellers that greatly enhance the reliability of the propeller during the flight. Following the steps below to attach the 1345s Quick-Release propellers.

1. Install the propellers with a white dot onto the mounting plates that have a white dot, and install the propellers without a white dot onto the mounting plates that do not have a white dot.



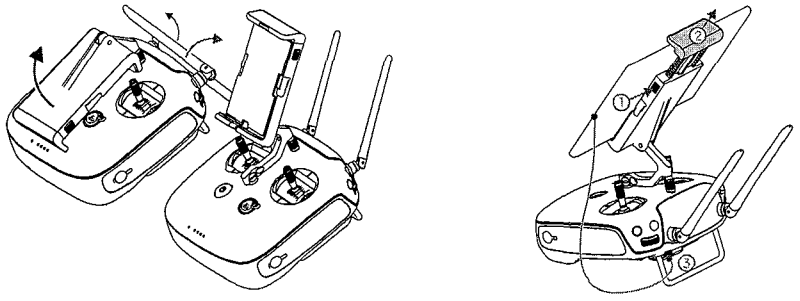
2. Align the hook (A) on the propellers with the securing spring (B), then press down the propeller onto the mounting plate then rotate the propellers according to the lock direction until it is secured.



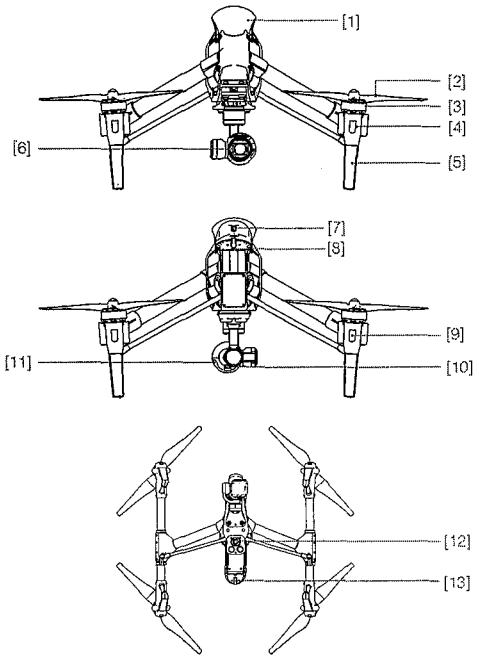
Preparing Remote Controller

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.



Aircraft Diagram



[1] GPS

[2] Propeller (P17)

[3] Motor

[4] Front LED (P12)

[5] Landing gear

[6] Gimbal and Camera (P35)

[7] Intelligent Flight Battery (P18)

[8] Aircraft Micro-USB Port

[9] Rear LED (P12)

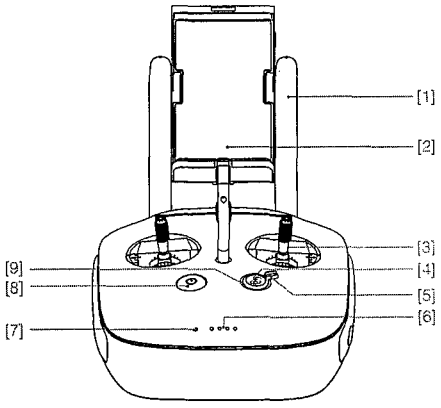
[10] Camera Micro-USB Port

[11] Camera Micro-SD Card Slot (P35)

[12] Vision Positioning Sensors (P16)

[13] Aircraft Status Indicator (P13)

Remote Controller Diagram



[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.

[6] Battery Level LEDs

Displays the current battery level.

[7] Status LED

Displays the power status.

[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.

[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

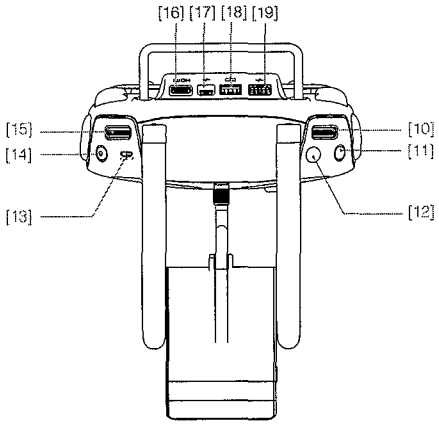
Use this dial to control the tilt of the gimbal.

[16] Mini-HDMI Port

Connect an HD compatible monitor to this port to get a live HD video preview of what the camera sees.

[17] Micro-USB Port

For connecting the remote controller to your computer.

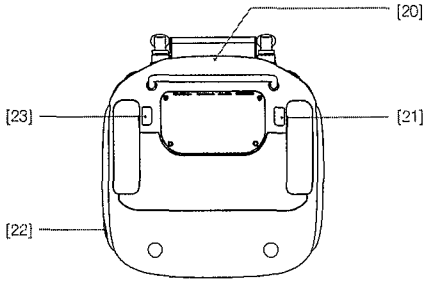


[18] CAN Bus Port

Reserved for future use.

[19] USB Port

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

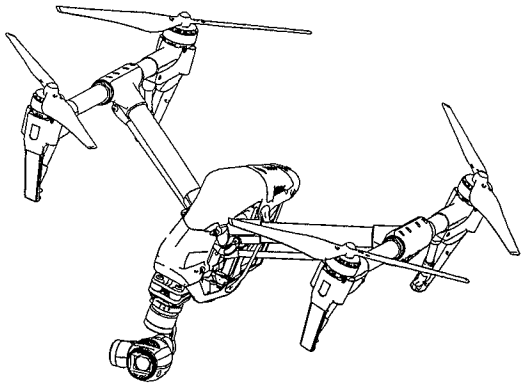
Connect to a power source to charge the remote controller's internal battery.

[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.



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.

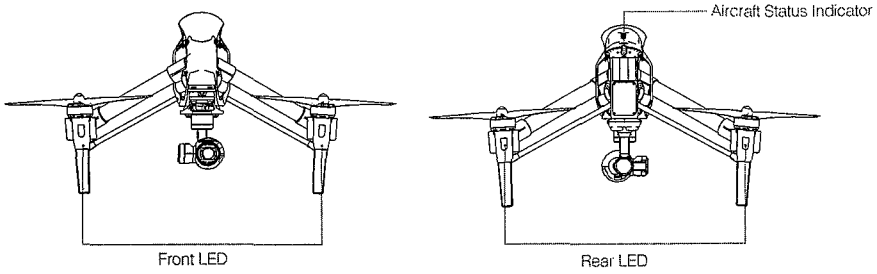
A mode (Attitude): The GPS and Vision Positioning System is not used for holding position. The aircraft only uses its barometer to maintain altitude. If it is still receiving a GPS signal, the aircraft can automatically return home if the Remote Controller signal is lost and if the Home Point has been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



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:

Aircraft Status Indicator Description

Normal	
Ⓡ Ⓖ Ⓨ ..... Red, Green and Yellow Flash Alternatively	Power on and self-check
Ⓖ Ⓨ ..... Green and Yellow Flash Alternatively	Aircraft warming up
Ⓖ ..... Green Flashes Slowly	Safe to Fly (P mode with GPS and Vision Positioning)
Ⓖ X2 ..... Green Flashes Twice	Safe to Fly (P mode with Vision Positioning but without GPS)
Ⓨ ..... Yellow Flashes Slowly	Safe to Fly (A mode but No GPS and Vision Positioning)
Warning	
Ⓨ ..... Fast Yellow Flashing	Remote Controller Signal Lost
Ⓡ ..... Slow Red Flashing	Low Battery Warning
Ⓡ ..... Fast Red Flashing	Critical Low Battery Warning
Ⓡ ..... Red Flashing Alternatively	IMU Error
Ⓡ —— Solid Red	Critical Error
Ⓡ Ⓨ ..... Red and Yellow Flash Alternatively	Compass Calibration Required

Return to Home (RTH)

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.

	GPS	Description
Home Point	🛰	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.

Smart RTH

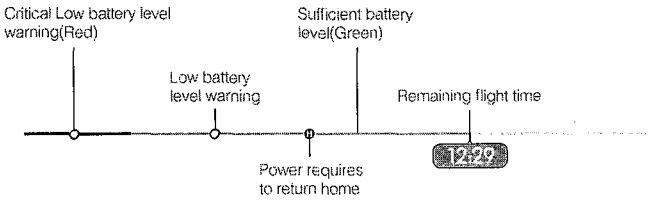
Using the RTH button on the remote controller (refer to "RTH button" on P28 for more information) or the RTH button in the DJI Pilot app when GPS is available to enables smart RTH. The aircraft return to the latest recorded Home Point, you may control the aircraft's orientation to avoid collision during 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.

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



Battery level indicator

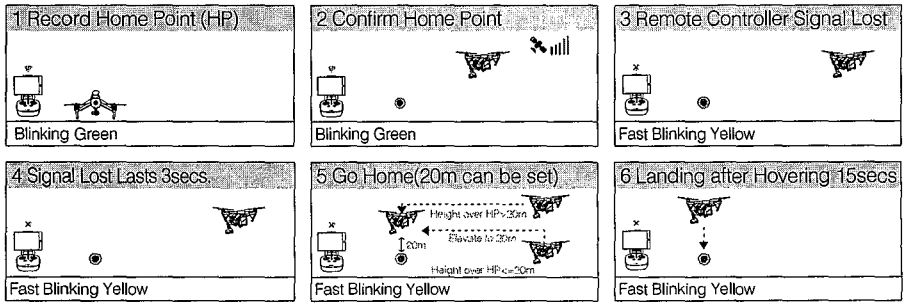
Battery Level Warning	Remark	Aircraft Status Indicator	DJI Pilot app	Flight Instructions
Low battery level warning	The battery power is low. Please land the aircraft.	Aircraft status indicator blinks RED slowly.	Tap "Go-home" to have the aircraft return to the Home point and land automatically, or "Cancel" 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

- 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.

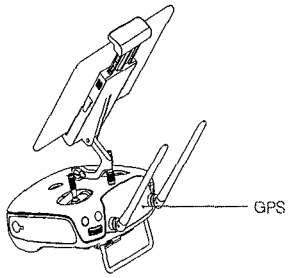
Failsafe Illustration



- 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.
- Aircraft will stop ascending and immediately return to the Home Point if you move the throttle stick if the aircraft reaches 20 m altitudes or beyond during Failsafe.

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:



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

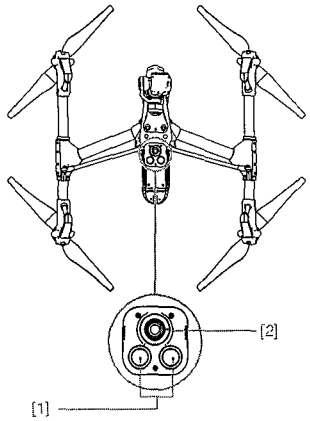
There are two options for Dynamic Home Point.
1. Set the aircraft current coordinate as the new Home Point.
2. Set the remote controller's coordinate as the new Home Point.

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"📍"and select"✈📍", to reset the aircraft's coordinates as the new Home Point.
4. The aircraft status indicator blinks green to show Home Point is set successfully.

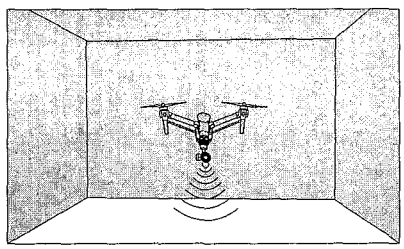
Vision Positioning System

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.



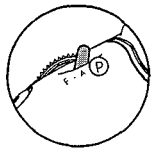
Using Vision Positioning

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.



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 > 10,000) 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.
- In the event of loss of remote controller's signal, the aircraft will hover for 8 seconds and then auto-land if it is in "P" mode.

- 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 stored in the internal storage device of the aircraft. User can gain access to these data through the DJI Pilot app. This includes flight duration, orientation, distance, aircraft status information, speed, and other parameters.

Attaching and Detaching the Propellers

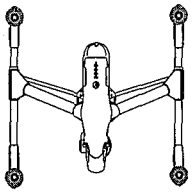
Use only DJI approved propellers with your Inspire 1. The grey or black nut on the propeller indicates the rotation direction of the propeller and where it should be attached. To attach the propellers properly,

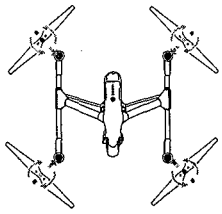
match the nut with the dots on the motors of your Inspire 1:

Propellers	Grey cap(1345)	Black cap(1345R)
Figure		
Attach On	Motors without a black dot	Motors with a black dot
Legends	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.

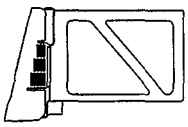
Detaching 1345s Quick-Release Propellers

Press the 1345s Quick-Release propellers downward firmly then rotate the propeller in the unlock direction to unlock the propellers.

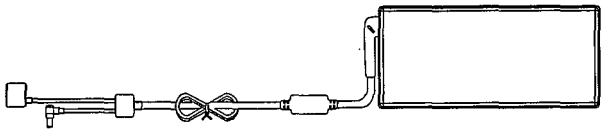
⚠
- Check that the propellers and motors are installed correctly and firmly before every flight.
- Ensure that all propellers are in good condition before each flight. DO NOT use old, chipped, or broken propellers.
- To avoid injury, STAND CLEAR of and DO NOT touch propellers or motors when they are spinning.
- 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

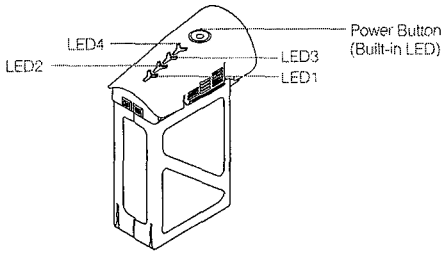
⚠ Battery must be fully charged before using it for the first time. Refer to "Charging the Intelligent Flight Battery" P21 for more information .

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 (press the power button to check battery level will cause battery to exit idle state) 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 Information History: Show the last 32 entries of battery information records that include warning messages and so on.
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



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.

Low Temperature Notice:

1. The performance of the intelligent Flight Battery is significantly reduced when flying in a low temperature environments (those with air temperatures below 5°C). Ensure that the battery is fully charged and the cell voltage is at 4.43 V before each flight.
2. Using the Intelligent Flight Battery in extremely low temperature environments (those with air temperatures below -10°C) is not recommended. When flying in environments with temperatures between 5°C and -10°C, the Intelligent Flight Battery should be able to achieve the appropriate voltage levels (above 4.2 V), but it is recommended that you apply the included insulation sticker to the battery in order to prevent a rapid drop in temperatures.
3. If the DJI Pilot app displays the "Critical Low Battery Level Warning" when flying in low temperature environments, stop flying and land the aircraft immediately. You will still be able to control the aircraft's movement when this warning is triggered.
4. Store the Intelligent Flight Battery in a room temperature environment and ensure that its temperature exceeds 5°C before using it in the low temperature environment.
5. When using the Inspire 1 in a low temperature environment, begin by allowing the aircraft to hover at a low altitude, for approximately one minute, to heat the battery.
6. To ensure optimum performance, keep the Intelligent Flight Battery's core temperature above 20°C when in use.

⚠ 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 flashing.
: LED is off.

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

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%

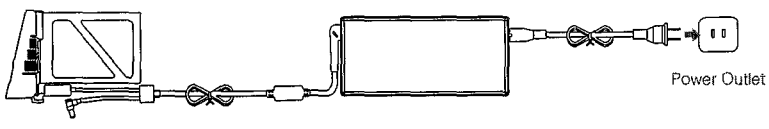
⚠ When battery life reaches 0%, it can no longer be used.

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.



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

Charging Protection LED Display

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

Battery Level Indicators while Charging					
LED1	LED2	LED3	LED4	Blinking Pattern	Battery Protection Item
				LED2 blinks twice per second	Over current detected
				LED2 blinks three times per second	Short circuit detected
				LED3 blinks twice per second	Over charge detected
				LED3 blinks three times per second	Over-voltage charger detected
				LED4 blinks twice per second	Charging temperature is too low (<0°C)
				LED4 blinks three times per second	Charging temperature is too high (>40°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:

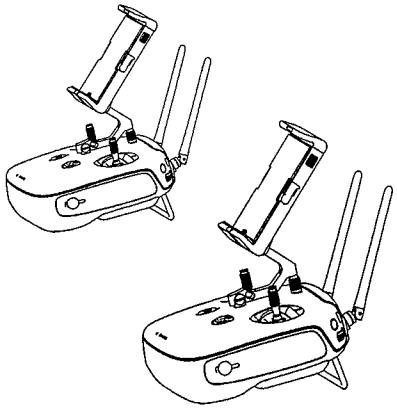
To effectively calibrate the battery capacity, it is recommended to charge and discharge the battery thoroughly for every 10 charge-and-discharge cycle. User should install the battery onto the aircraft and then power on the aircraft to initiate the discharge process, discharge the battery until the aircraft is powered off automatically. User should then fully charge the battery to ensure the battery is working at its optimal.

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 5% 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 5% of power left, or until the battery can no longer be turned on.

Remote Controllers

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



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.

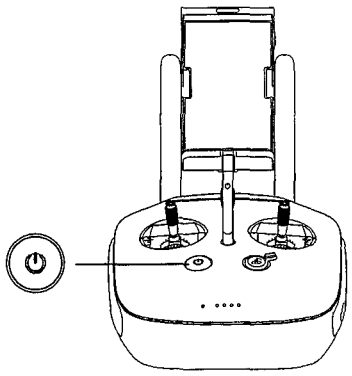
⚠ Do not operate more than 3 aircrafts within in the same area (size equivalent to a soccer field) to prevent transmission interference.

Remote Controller Operations

Powering On And Off The Remote Controller

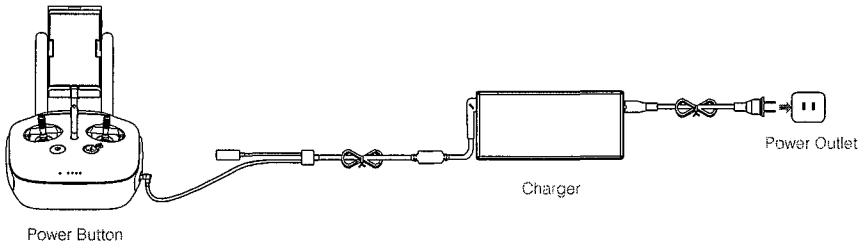
The Inspire 1 remote controller is powered by a 2S rechargeable battery with a capacity of 6000mAh. The battery level is indicated by the Battery Level LEDs on the front panel. Follow the steps below to power on your remote controller:

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.



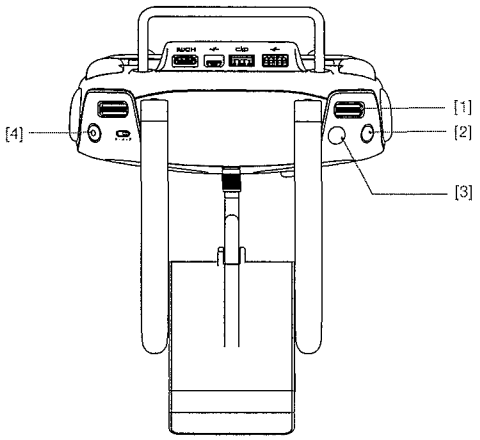
Charging Remote Controller

Charge the remote controller via supplied charger.



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

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.

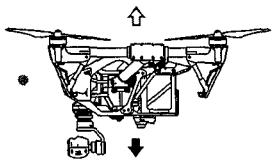
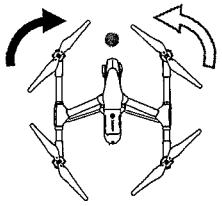
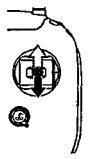
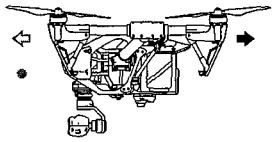
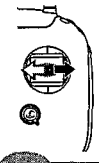
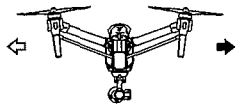
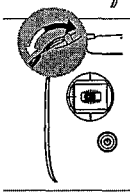
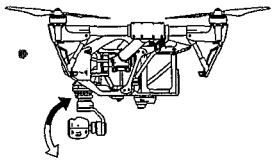
[4] Recoding Button

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.

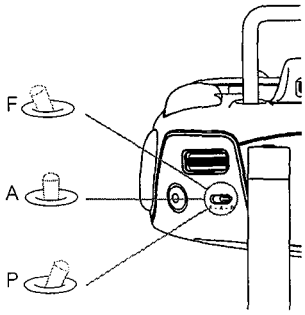
Stick Neutral/ mid point: Control sticks of the Remote Controller are placed at the central position.
Move the Stick: The control stick is pushed away from the central position.

Remote 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.

Flight Mode Switch

Toggle the switch to select the desired flight mode. You may choose between; P mode, F mode and A mode.

Figure	Flight Mode
F	F mode
A	A mode
P	P mode



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" .

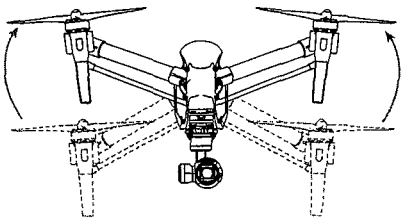
Transformation Switch / RTH Button

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.

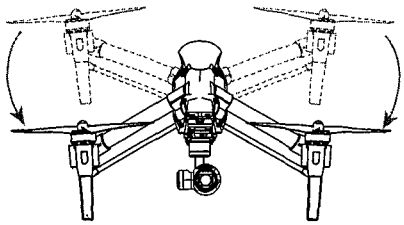
Transformation Switch

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.



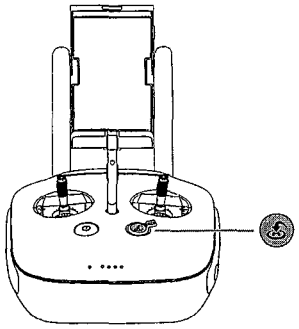
2. **Lower:** The landing gear will lower to its lowest position for landing.



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

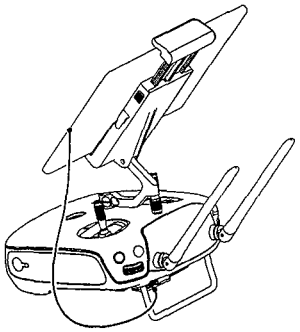
RTH button

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.



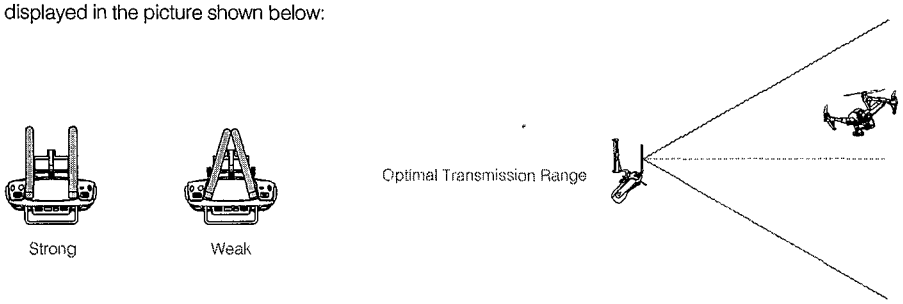
Connecting Mobile Device

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.



Optimal Transmission Range

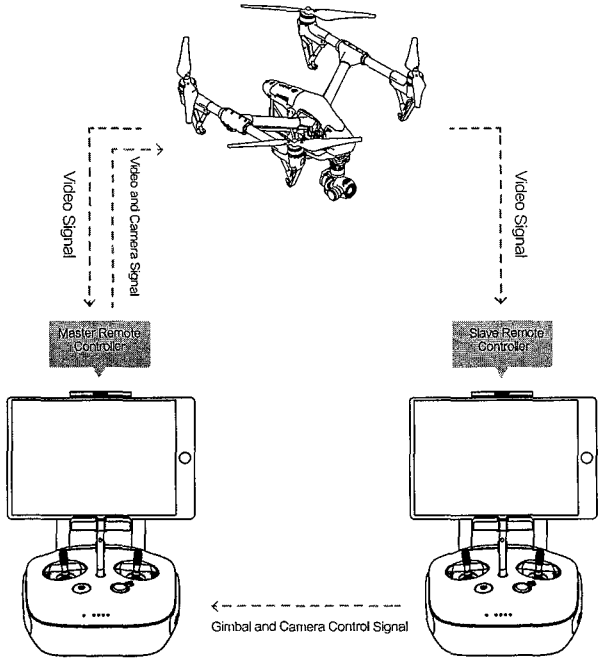
The signal transmission between aircraft and remote controller perform best within the range that displayed in the picture shown below:



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.



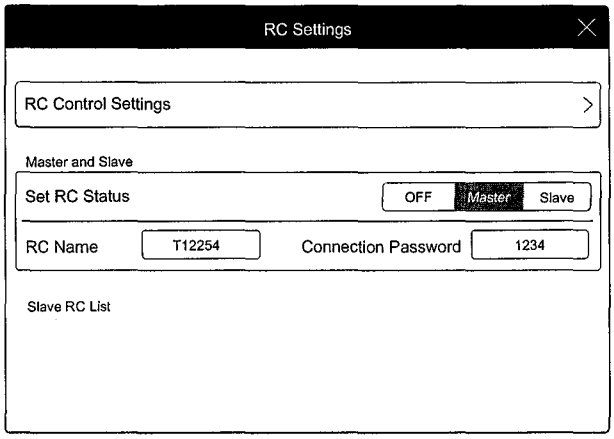
⚠ Use the gimbal dial on the remote controller to control the pitch movement of the camera in the single remote controller mode, however, you cannot control the pan movement of the camera.

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:

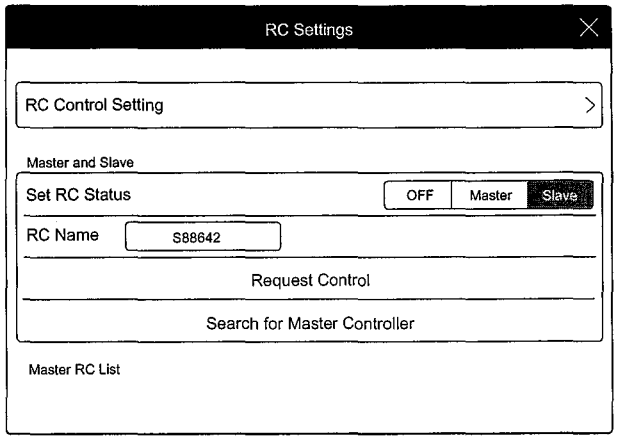
1. Connect the remote controller to your mobile device and launch the DJI Pilot app.
2. Go to the Camera page, and tap to enter the remote controller settings window.
3. Tap "Set RC Status" to enable Master-and-Slave mode.
4. Select "Master" in the "Set RC Status" section to set the remote controller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



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

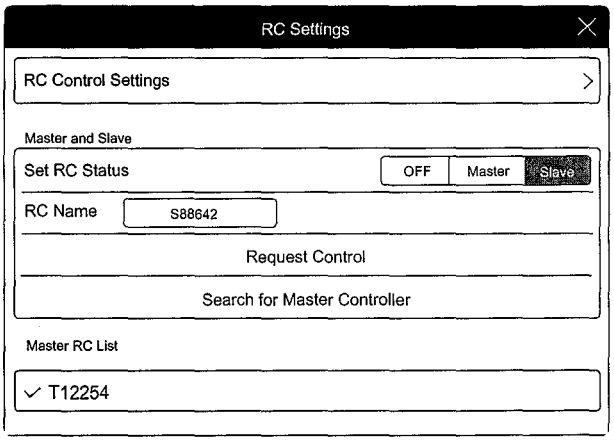
"Slave" Remote Controller:

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

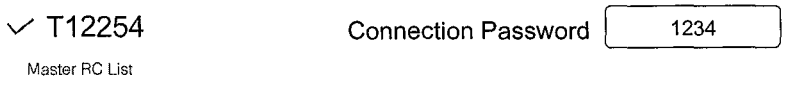


⚠ Remote controller cannot link to the aircraft if the remote controller is set as "Slave". Meanwhile, the "Slave" remote controller cannot control the orientation of the aircraft. Reset the remote controller to "Master" in DJI Pilot app if you wish to link the remote controller to the aircraft.

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

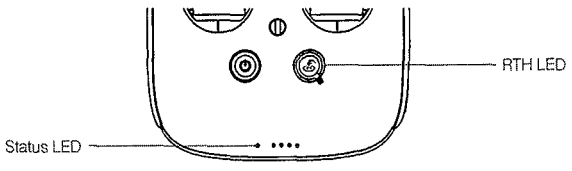


3. Select the "Master" remote controller from the "Master RC List" and input the connection password to connect to the desired "Master" remote controller.



Remote Controller Status LED

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.



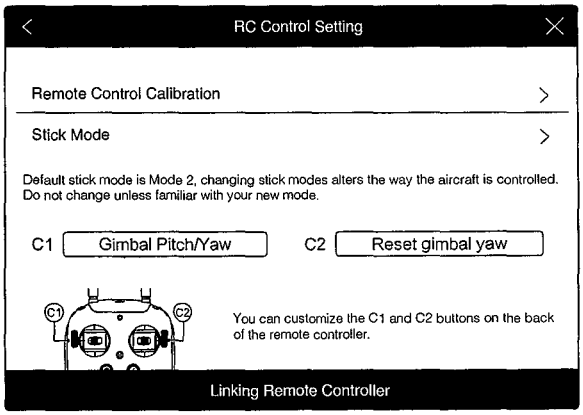
Status LED	Alarm	Remote Controller Status
Ⓡ —— Solid Red	♪ chime	The remote controller set as "Master" but it is not connected with the aircraft.
Ⓖ —— Solid Green	♪ chime	The remote controller set as "Master" and it is connected with the aircraft.
Ⓟ —— Solid Purple	D-D-	The remote controller set as "Slave" but it is not connected with the aircraft.
Ⓑ —— Solid Blue	D-D-♪ chime	The remote controller set as "Slave" and it is connected with the aircraft.
Ⓡ ····· Slow Blinking Red	D-D-D·····	Remote controller error.
Ⓡ/Ⓖ / Ⓡ/Ⓨ ····· Red and Green/ Red and Yellow Alternate Blinks	None	HD Downlink is disrupted.
RTH LED	**Sound**	**Remote Controller Status**
Ⓦ —— Solid White	♪ chime	Aircraft is returning home.
Ⓦ ····· Blinking White	D· · ·	Sending Return to Home command to the aircraft.
Ⓦ ····· Blinking White	DD · · · · ·	Aircraft Return to Home in progress.

⚠ The Remote Status Indicator will blink red, sound an alert, when the battery level is critically low.

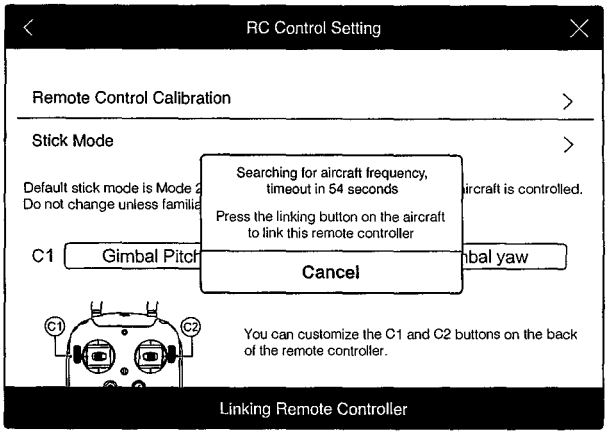
Linking the Remote Controller

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:

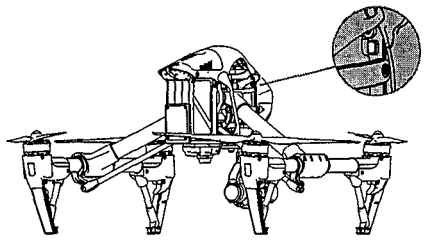
1. Power on the remote controller and connect to the mobile device. Launch DJI Pilot app.
2. Power on the Intelligent Flight Battery.
3. Enter "Camera" view and tap on and then tap "Linking Remote Controller" button as shown below.



4. The remote controller is ready to link. The Remote Controller Status Indicator blinks blue and "beep" sound is emitted.



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.



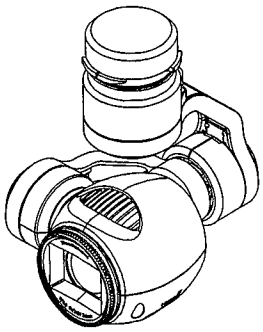
⚠
- Remote controller cannot link to the aircraft if the remote controller is set as "Slave". Meanwhile, the "Slave" remote controller cannot control the orientation of the aircraft. Reset the remote controller to "Master" in DJI Pilot app if you wish to link the remote controller to the aircraft.
-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

Gimbal and Camera

This chapter provides the technical specifications of the camera and explains the working mode of the gimbal.



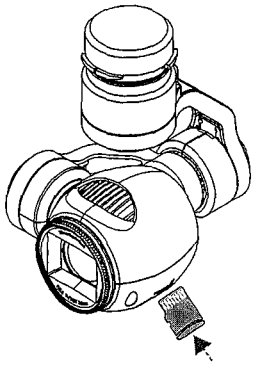
Camera and Gimbal

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

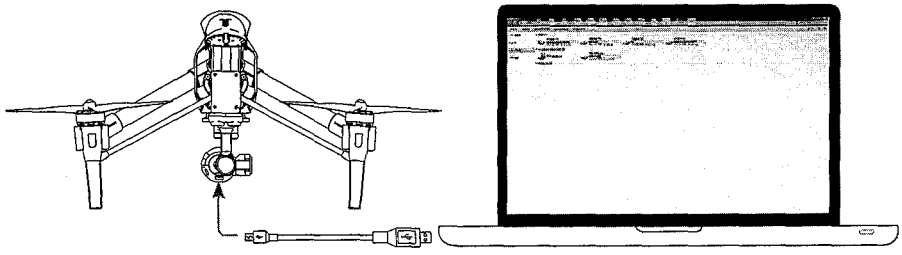
To store your photos and videos, plug in the micro-SD card into the slot shown below before powering on the Inspire 1. The Inspire 1 comes with a 16GB micro-SD card and supports up to a 64GB micro-SD card. A UHS-1 type micro-SD card is recommended, because the fast read and write capability of these cards enables you to store high-resolution video data.



⊘ 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.

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.

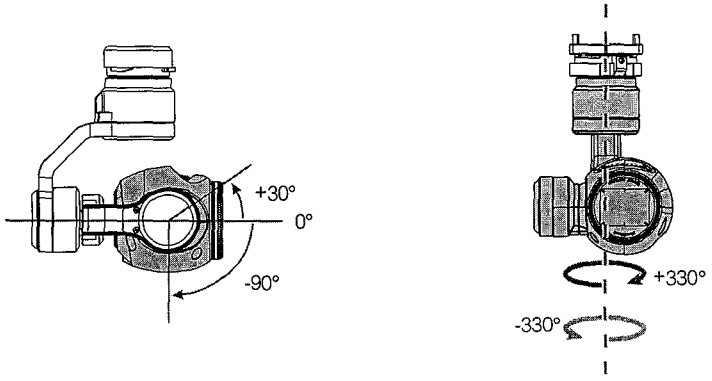
ND Filter

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.



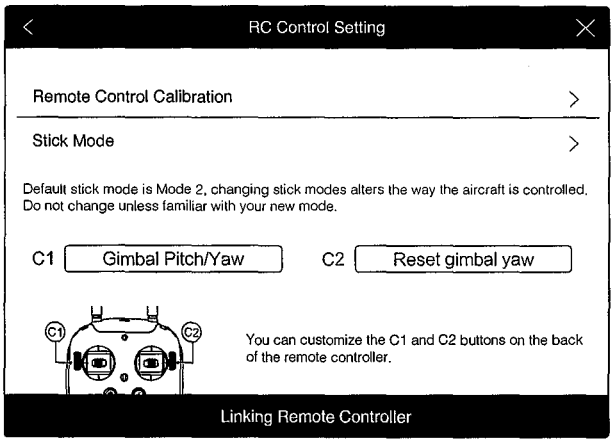
Use the gimbal dial on the remote controller to control pitch movement of the camera by default. Note that you cannot control the pan motion of the camera by default. Enable the "Master-and-Slave" mode and set the remote controller to "Slave" state if you wish to control both the pan and pitch movement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

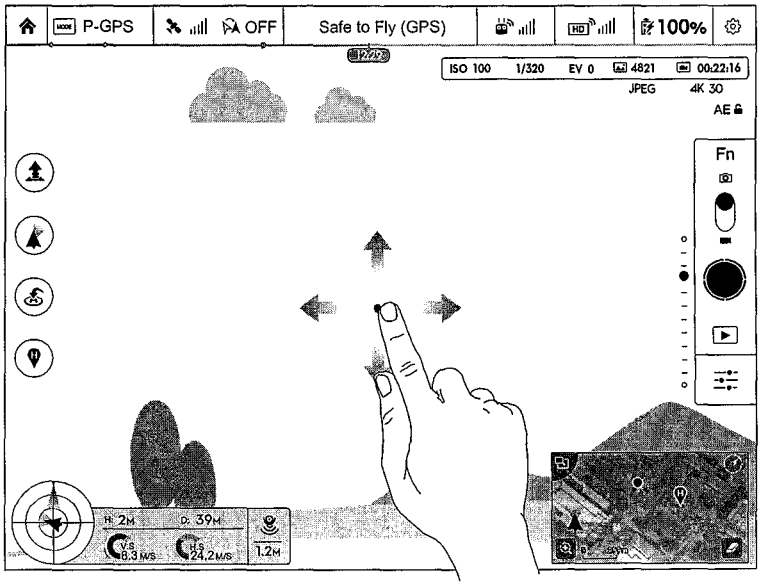


Press C1 or C2 button to switch from pitch mode to yaw mode. You may use the gimbal dial to pan the gimbal under yaw mode. Press C1 or C2 again to exit yaw mode.

Using DJI Pilot App to Control Gimbal

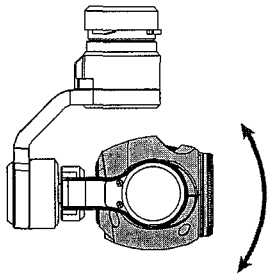
Follow the steps below to use DJI Pilot app to control the gimbal orientation:

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.

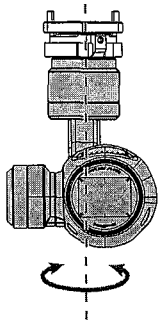


Gimbal Operation Modes

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



Pan

	Follow Mode	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.
	FPV Mode	The Gimbal will lock to the movements of the aircraft to provide a First-Person-View flying experience.
	Free Mode	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.
	Re-alignment	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.

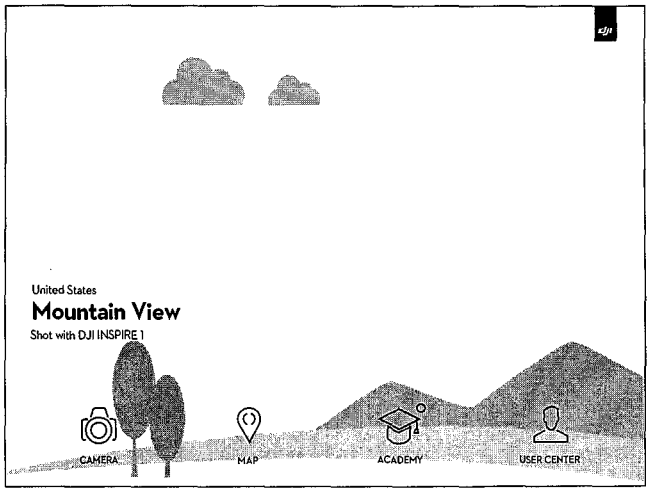
- Gimbal motor error may occur in these situations: (1) Gimbal is placed on uneven ground. (2) Gimbal has received an excessive external force, e.g. a collision. Please take off from flat, open ground and protect the gimbal after powering up.
- Flying in heavy fog or cloud may make the gimbal wet, leading to a temporary failure. The gimbal will recover when it dries out.

DJI Pilot App

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

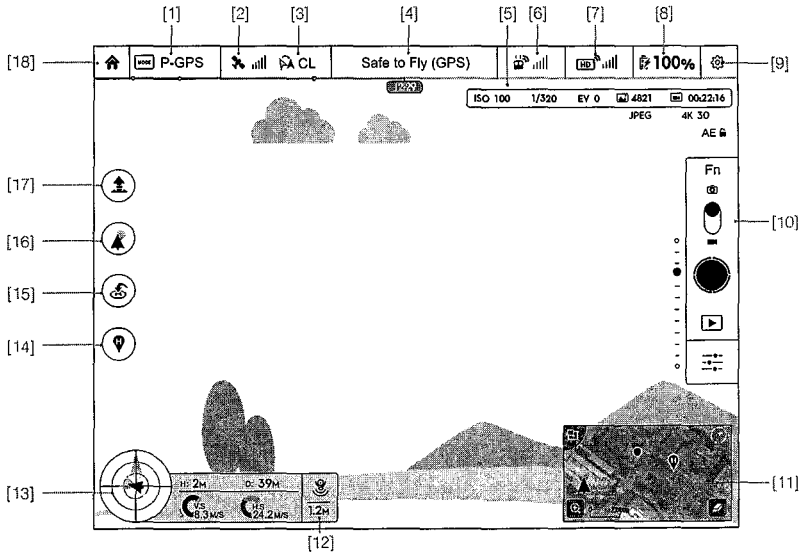
DJI Pilot App

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] Flight Mode

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

CL : 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

Safe to Fly (GPS) : 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

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

[8] Battery Level

100%: 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

AE : Tap to enable or disable the camera exposure lock.

Function

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

Shutter

: Tap this button to take a single photo.

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

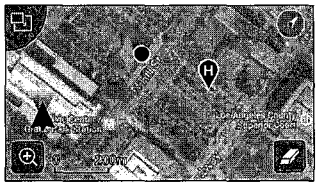
: Tap to enter playback page. You can preview photos and videos as soon as they are captured.

Camera Settings and Shooting Mode

: Tap to enter the Camera Settings page and switch from camera shooting mode from manual to auto.

[11] Map

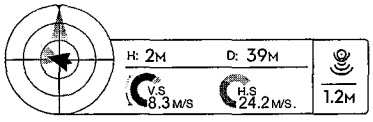
Display the flight path of the current mission. Tap to switch from the Camera GUI to the Map GUI.



[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.

[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

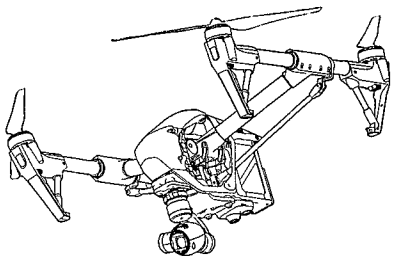
User can view the current flight route in a larger map view in this page. You can also perform Auto take-off and Landing in the page. Ensure your mobile device has access to the Internet. Due to the map data required, Wi-Fi connection is recommended. Internet access is required to cache the map, if Wi-Fi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



Flight

This chapter describes the flight safety and flight restrictions.

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

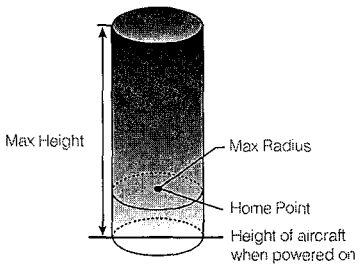
Flight limits on height and distance can be set. The details of these flight limits are described in the following section.

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.



GPS Signal Strong ⓖ ····· Blinking Green			
	Flight Limits	DJI Pilot App	Aircraft Status Indicator
Max Height	Flight altitude must be under the set height.	Warning: Height limit reached.	None.
Max Radius	Flight distance must be within the max radius.	Warning: Distance limit reached.	Rapid red flashing ※ ····· when close to the max radius limit.

GPS Signal Weak Ⓨ ····· Blinking Yellow			
	Flight Limits	DJI Pilot App	Aircraft Status Indicator
Max Height	Flight height restricted to 120m and under.	Warning: Height limit reached.	None.
Max Radius	No limits		

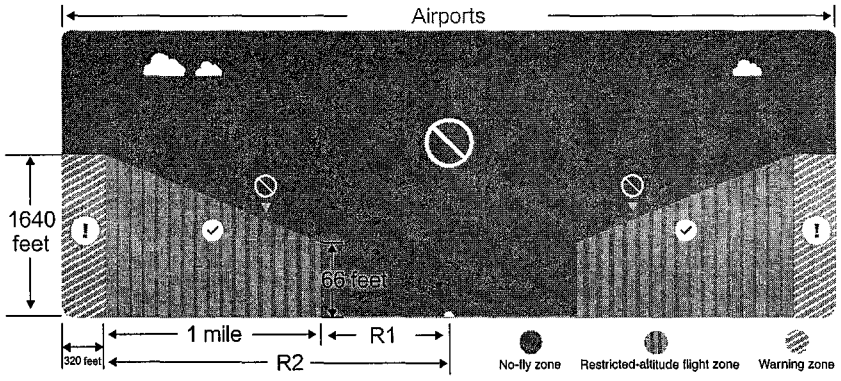
⚠ • If you fly out of the limit, you can still control the Inspire 1, but cannot fly it further.
• If the Inspire 1 flies out of the max radius in Ready to Fly (non-GPS) mode, it will fly back within range automatically.

No-Fly Zones

All No-Fly Zones are listed on the DJI official website at http://flysafe.dji.com/no-fly. No-Fly Zones are divided into Airports and Restricted Areas. Airports include major airports and flying fields where manned aircraft operate at low altitudes. Restricted Areas include borders between countries or sensitive sites. The details of the No-Fly Zones are explained below:

Airport:

(1) Airport No-Fly Zones are comprised of Takeoff Restricted Zones and Restricted-Altitude Zones. Each zone features circles of various size.
(2) R1 depends on the size and shape of the airport, and is an area around the airport that is a Takeoff Restricted Zone, inside of which take-off and flight is prevented.
(3) From R1 to R1+1 mile around the airport, the flight altitude is limited on a 15 degree incline, starting at 65 feet (20 meters) from the edge of airport and radiating outward. The flight altitude is limited to 1640 feet (500 meters) at R1+1 mile.
(4) When the aircraft is within 320 feet (100 meters) of the No-Fly Zones, a warning message will appear in the DJI Pilot app.

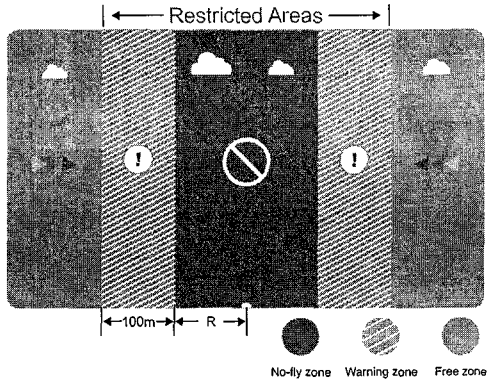


Restricted Areas:

(1) Restricted Areas do not have a flight altitude restriction.

(2) R around the designated Restricted Area is a Take-off Restricted area. Aircraft cannot takeoff within this zone. The value of R varies depending on the definition of the Restricted Area.

(3) A "warning zone" has been set around each Restricted Area. When the aircraft is within 0.6 miles (1 km) of this zone, a warning message will appear in the DJI Pilot app.



GPS Signal Strong ····· G ····· 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.

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.

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

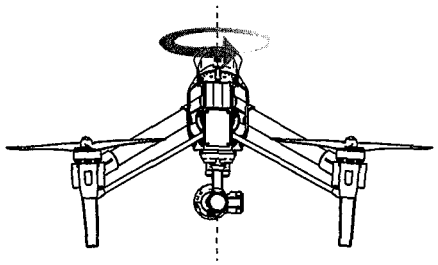
IMPORTANT: Make sure to calibrate the compass in every new flight location. The compass is very sensitive to electromagnetic interference, which can cause abnormal compass data leading to poor flight performance or even failure. Regular calibration is required for optimum performance.

- 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.

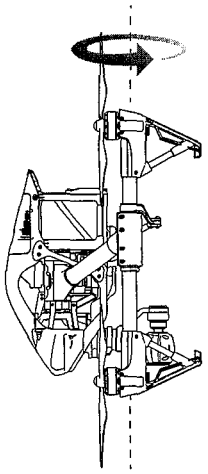
Calibration Procedures

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.



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.



⚠ 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.

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:

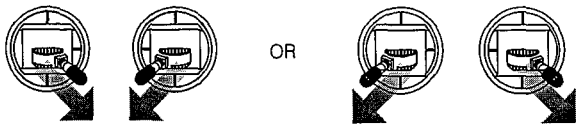
1. Ensure the aircraft is in "P" mode.
2. Check the landing area condition before tapping "⬇", to perform landing.
3. Aircraft lowers the landing gear and proceed to land automatically.

Landing gear will automatically raise when the aircraft reaches an altitude of 1.2m for the first time, and automatically lower every time it descends to 0.8m. Users can turn this feature ON/OFF in the Pilot app.

Starting/Stopping the Motors

Starting Motors

The Combination Stick Command (CSC) listed below are used to start the motors instead of simply pushing the stick up. Ensure that you perform the CSC in one motion.

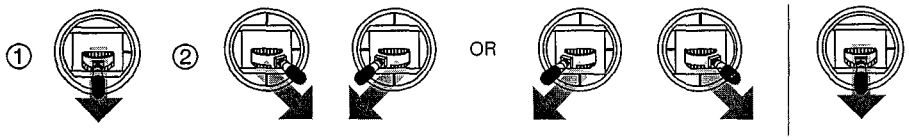


Stopping Motors

There are two methods to stop the motors.

Method 1: When the Inspire 1 has landed, push the throttle down ①, then conduct CSC ②. 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.



⚠ Do not perform CSC when aircraft is in midair, otherwise the motors will be stopped.

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.

⚠
- 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.

FAQ

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.

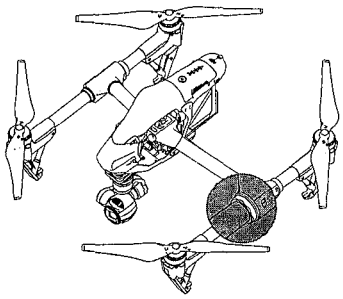
12. Can I upgrade and buy a second remote controller if I only buy a single remote controller now?
    Yes.

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).

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.

Appendix

Appendix

Specifications

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

Camera	
Name	X3
Model	FC350
Total Pixels	12.76M
Effective Pixels	12.4M
Image Max Size	4000x3000
ISO Range	100-3200 (video) 100-1600 (photo)
Electronic Shutter Speed	8 s to 1/8000 s
FOV (Field Of View)	94°
CMOS	Sony EXMOR 1/2.3"
Lens	20mm (35mm format equivalent) f/2.8 focus at ∞ 9 Elements in 9 groups Anti-distortion
Still Photography Modes	Single shoot Burst shooting: 3/5/7 frames Auto Exposure Bracketing (AEB): 3/5 bracketed frames at 0.7EV Bias Time-lapse
Video Recording Modes	UHD (4K): 4096x2160p24/25, 3840x2160p24/25/30 FHD: 1920x1080p24/25/30/48/50/60 HD: 1280x720p24/25/30/48/50/60
Max Bitrate Of Video Storage	60 Mbps
Supported File Formats	FAT32/exFAT Photo: JPEG, DNG Video: MP4/MOV (MPEG-4 AVC/H.264)
Supported SD Card Types	Micro SD Max capacity: 64 GB. Class 10 or UHS-1 rating required.
Operating Temperature Range	0° to 40° C
Remote Controller	
Name	C1
Operating Frequency	922.7MHz~927.7 MHz (Japan Only) 5.725~5.825 GHz;2.400~2.483 GHz
Transmitting Distance	2 km (Outdoor And Unobstructed)
EIRP	10dBm@900m, 13dBm@5.8G, 20dBm@2.4G
Video Output Port	USB, Mini-HDMI
Power Supply	Built-in battery
Charging	DJI charger
Dual User Capability	Host-and-Slave connection

Mobile Device Holder	Tablet or Smart Phone
Output Power	9 W
Operating Temperature Range	-10° to 40° C
Storage Temperature Range	Less than 3 months: -20° to 45° C More than 3 months: 22° to 28° C
Charging Temperature Range	0-40° C
Battery	6000 mAh LiPo 2S
Charger	
Model	A14-100P1A
Voltage	26.3 V
Rated Power	100 W
Battery (Standard)	
Name	Intelligent Flight Battery
Model	TB47
Capacity	4500 mAh
Voltage	22.2 V
Battery Type	LiPo 6S High voltage battery
Energy	99.9 Wh
Net Weight	570 g
Operating Temperature Range	-10° to 40° C
Storage Temperature Range	Less than 3 months: -20° to 45° C More than 3 months: 22° C to 28° C
Charging Temperature Range	0° to 40° C
Max Charging Power	180 W
Battery (Optional)	
Name	Intelligent Flight Battery
Model	TB48
Capacity	5700 mAh
Voltage	22.8 V
Battery Type	LiPo 6S
Energy	129.96 Wh
Net Weight	670 g
Operating Temperature Range	-10 to 40° C
Storage Temperature Range	Less than 3 months: -20 to 45° C More than 3 months: 22° to 28° C
Charging Temperature Range	0° to 40° C

Max Charging Power	180 W
Vision Positioning	
Velocity Range	Below 8 m/s (2 m above ground)
Altitude Range	5-500 cm
Operating Environment	Brightly lit (lux > 15) patterned surfaces
Operating Range	0-250 cm
DJI Pilot App	
Mobile Device System Requirements	iOS version 7.1 or later; Android version 4.1.2 or later
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

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:

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.
Home Lock (HL)*	Record a Home Point (HP), and push Pitch stick to control the aircraft far from or near to the HP.
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.

*Home Lock and Point of Interest feature are coming soon.

Prerequisites of IOC

Use the IOC feature under the following condition:

Modes IOC	GPS enabled	GPS	Flight Distance Limits
Course Lock	No	None	None
Home Lock	Yes		Aircraft ≥10m Home Point
POI	Yes		Aircraft 5m~500m Point of Interest

Using IOC

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.

How to Update Firmware

Follow the process described below to upgrade the aircraft, remote controller and battery.

Updating the Aircraft Firmware

Step 1- Check Battery and SD Card Capacity

Ensure the Intelligent Flight Battery has 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. Ensure the Inspire 1 is powered off then insert the SD card into the SD card slot on the Inspire 1 camera.

Step 3- Update the Aircraft

1. Ensure the remote controller is powered off and then power on the aircraft. Upgrade will begin automatically after aircraft is powered on.
2. It will take approximately 25 minutes to complete the firmware update. The camera will sound a short pulse of "D-D-D-D" beeping sound to indicate the upgrade is in progress and sound a "D---DD" beeping sound to indicate the update is complete with success.
3. Check the upgrade status by opening the ".txt" file that is automatically generated after the update. The update is successful if the text "result: successful" is in the document. Try upgrading the firmware again if the text "result: failed" is found or the gimbal sound a long beep sound.

Updating the Remote Controller Firmware

Step 1- Check Battery and SD Card Capacity

Remote controller firmware is included in the aircraft firmware update package. Use the same update package file that is downloaded from the DJI official website. Ensure the remote controller battery level is above 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. Insert the SD card into a SD card reader or the USB disk onto the remote controller USB port when remote controller powered off. If you do not have a SD card reader, you may insert the SD card into the gimbal and connect the gimbal with remote controller to upgrade the remote controller.

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 camera will sound a beeping sound and the Status LED on the remote controller shows solid blue to indicate the update is in progress. The Status LED on remote controller shows solid green and beeping sound will stop if the upgrade is completed with success. The Status LED on remote controller shows solid red if upgrade is failed. Try upgrade again.

Updating Intelligent Flight Battery Firmware

The Intelligent Flight Battery is upgraded during the aircraft firmware upgrade process. It is recommended to keep the upgrade package files in your SD card. The upgrade will start automatically after power cycling the aircraft.

⚠
- Do not perform firmware update while the aircraft is still flying in the air. Only carry out firmware update when the aircraft is landed.
- 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.
- 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.

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 전파혼신 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。

The content is subject to change.

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