



July 6, 2015

Exemption No. 11981 Regulatory Docket No. FAA–2015–1379

Mr. Charles P. Liebold Jr. Get Creative Group 5803 Beckenham Way Oak Ridge, NC 27310

Dear Mr. Liebold:

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 April 22, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Get Creative Group (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial photography and videography.

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

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

#### **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<sup>1</sup>. 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, Get Creative Group is granted an exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a), 91.7(a), 91.119(c), 91.121, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), to the extent necessary to allow the petitioner to operate a UAS to perform aerial data collection. This exemption is subject to the conditions and limitations listed below.

<sup>&</sup>lt;sup>1</sup> 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.

#### **Conditions and Limitations**

In this grant of exemption, Get Creative Group 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: <a href="www.ntsb.gov">www.ntsb.gov</a>.

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 July 31, 2017, unless sooner superseded or rescinded.

Sincerely,

/s/

John S. Duncan Director, Flight Standards Service

Enclosures

Docket Operations, M-30 U.S. Department of Transportation 1200 New Jersey Avenue, SE Room W12-140 West Building Ground Floor Washington DC 20590-0001 4/22/15

Re: Exemption Request Section 333 of the FAA Reform Act of the Federal Aviation Regulations from part 21, subpart H; and Sections 45.23(b), 91.7(a), 91.9(b)(2), 91.119, 91.121, 91.151(a), 91.203(a) and (b), 91.405(a), 91.407(a)(1), 91.409(a)(2), and 91.417(a) and (b) of Title 14, Code of Federal Regulations (14 CFR).

#### Dear Mr. Duncan

My name is Charles P. Liebold Jr. and I am the founder of Get Creative Group located in Oak Ridge NC. We are a small design, photography and video production business that began in 2008. I am writing pursuant to the FAA Modernization and Reform Act of 2012 and the procedures contained within 14 C.F.R. 11, to request that Charles P. Liebold Jr. of the Get Creative Group owner of a unmanned aircraft system (UAS) be granted exemption from the Federal Aviation Regulations (FARS) listed within so that I may operate my UAS commercially in airspace regulated by the Federal Aviation Administration. This exemption would allow operation of my UAS for the purpose of aerial photography, aerial videography to augment real estate listing video and or real estate property developers.

Get Creative Group equipment is a DJI Inspire 1 (4) blade quad copter weighing 6 lbs. 7.5 ounces. (see appendix 1) The UAS has a maximum airspeed of 30 knots. Using remote controller operating on frequency 5.728-5.850GHZ / 2.400-2.483GHZ. The Inspire 1 is equipped with built in ground support technology that allows it to fly utilizing GPS for stability, tracking, safe flight mode and return to home feature in the event of loss of remote control signal or critical low battery. All flights start with a pre-flight safety check and all flight data are recorded. The Inspire 1 is equipped with a fixed position camera that sends a live video signal to the controller allowing the (PIC) person in control to monitor real time video. Flight data, speed height, distance, battery level and general aircraft conditions are also displayed during operation. The Inspire 1 battery has a flight time of 12 minutes and is therefore always returned to original take off point and always flown utilizing VLOS. I have invested a considerable amount of money and have logged over 10 hours with this particular UAS and trained 15 hours with other UAS operators equipment and find that this model to be far superior in flight, safety and reliability. My request for exemption would allow me to offer services to my clients at a considerable discount compared to using Helicopters and fixed

wing planes that pose severe safety risk to accomplish the type of aerial coverage needed in the real estate market.

**UAS Safety Operating Parameters** 

We will abide by the following additional operating conditions under this exemption, which ensures a level of safety during UAS flight.

Operate UAS below 400 feet and within a radius of 1000 feet from PIC always maintaining VLOS.

Obtain permission from the owner/controller of any vessels, vehicles and Structures when operations may be conducted closer than 500 feet to any such vessels, vehicles or structures; we will conduct a safety assessment of the risk of operating closer to those objects and determine that it does not present an undue hazard.

Operate the UAS for 8-12 minutes per flight.

Land UAS prior to the manufacturer's recommended minimum level of battery power.

Operate UAS during daylight hours only within visual line of sight (VLOS) Utilize the UAS' global positioning system (GPS) flight safety feature whereby it hovers and then slowly lands if communication with the remote control pilot is lost or battery becomes critically low

Contact respective airports if operations will be within 5 miles to advise them of h estimated flight time, flight duration, elevation of flight and other pertinent information.

Always obtain all necessary permissions prior to operation

Have procedures in place to abort flights in the event of safety breaches or potential danger.

Review weather reports prior to flight and never operate UAS in unsafe conditions, high wind, low clouds or conditions that hinder visibility. Only operate in safe environments that are strictly controlled, are away from power lines, elevated lights, airports and densely populated areas (defined by areas depicted in "yellow" on VFR charts and through obtaining information regarding congested areas from the local Flight Standards District Office (FSDO); Also conduct extensive preflight inspections and protocols, during which safety carries primary importance

The PIC will also have a minimum of 5 hours logged on this craft and 10 hours minimum flying UAS quad copters under varying conditions and environments and will follow all safety protocol of Get Creative Group as well as guidelines of 14 C.F.R 61.51(b) having the ability to safely operate the UAS in a manner consistent with the operating documents, including evasive and emergency maneuvers and maintaining appropriate distances from people, vessels, vehicles and structures as outlined.

Specific Exemptions Requested Given the size, weight, speed, and limited operating area associated with the UA, we feel an exemption from 14 CFR part 21, Subpart H (Airworthiness Certificates) and § 91.203(a) and (b) (Certifications required), subject to certain conditions and limitations, is warranted and meets the requirements for an equivalent level of safety under 14 CFR part 11 and Section 333 of P.L. 112-95 (Section 333).

We request an exemption from § 45.23 Marking of the aircraft because the UA will not have a cabin, cockpit or pilot station on which to mark certain words or phrases. Further, the two-inch lettering is difficult to place on such a small aircraft with dimensions smaller than the minimal lettering requirement. Regardless of this, we can mark the UAS in the largest possible lettering by placing the word "Experimental" on its fuselage as required by § 45.29(f) so that anyone will see the markings.

We request an exemption from § 91.7(a) which prohibits the operation of an aircraft without an airworthiness certificate, since there is currently no certificate applicable to our operation, this regulation is inapplicable.

We request an exemption from §§ 91.405(a), 91.407(a)(1), 91.409(a)(2) and 91.417(a) and (b) Maintenance inspections since they only apply to aircraft with an airworthiness certificate. However, as a safety precaution we will perform a preflight inspection of the UAS before each flight as outlined in the attached operating documents.

We request an exemption from § 91.9(b)(2) which requires an aircraft flight manual in the aircraft, however since there are no pilots or passengers on board the aircraft and given its size, this regulation is inapplicable. We believe an equivalent level of safety will be achieved by maintaining a safety/flight manual with the UAS ground station.

We request an exemption from § 91.119 which prescribes safe altitudes for the operation of civil aircraft, but it allows helicopters to be operated at lower altitudes in certain conditions. We will not operate our UAS above the altitude of 400 feet above ground level (AGL) and will also only operate in safe areas away from the public and traffic, thus "providing a level of safety at least equivalent to or below those in relation to minimum safe altitudes." Given the size, weight, maneuverability, and speed of the UAS, an equivalent or higher level of safety will be achieved.

We request an exemption from § 91.121 Altimeter settings as it is inapplicable since the UAS utilizes electronic GPS with a barometric sensor.

We request an exemption from § 91.151(a) Fuel requirements for flight in VFR conditions. The UAV is 100% electric and two low battery alerts are issued - per the operating documents, the UAV will be landed at the first alert. Also, our flights will last only 8-12 minutes each, and the UAS has an automated function, which results in immediate landing when a low battery is detected. The PIC will not begin a flight unless (considering wind and forecast weather conditions) there is enough power to fly to the first point of intended landing and, assuming normal cruising speed, land the UA with 30% battery power remaining.

#### **Public Interest**

Aerial videography for geographical awareness and for real estate marketing has been around for a long time through manned fixed wing aircraft and helicopters, but for small business owners, its expense has been cost-prohibitive. By granting this exemption we would be able to provide this service at a much lower cost. Further, our small UAS will pose no threat to the public given its small size and lack of combustible fuel when compared to larger manned aircraft. Additionally, the operation of our UAS will minimize ecological damage and promote economic growth by providing information to companies looking to relocate or build in the metro areas we service.

### Summary

We will comply with all of the following conditions and limitations should this grant of exemption be provided:

1) Operations will be limited to the following aircraft described in the operating documents which is a quad-rotor aircraft weighing less than 7 pounds: DJI Inspire 1

#### Aircraft System.

- 2) The UAS will not be flown at an indicated airspeed exceeding 30 knots.
- 3) The UAS will be operated at an altitude of no more than 400 feet above ground level (AGL), as indicated by the procedures specified in the operating documents. All altitudes reported to ATC must be in feet AGL.
- 4) The UAS will be operated within visual line of sight (VLOS) of the Pilot In Command (PIC) at all times.
- 5) All operations may utilize a visual observer (VO). The UA will be operated within the visual line of sight (VLOS) of the VO at all times. The VO and PIC will be able to communicate verbally at all times. The PIC will be designated before the flight and will not transfer his or her designation for the duration of the flight.

The PIC will ensure that the VO can perform the functions prescribed in the operating documents.

- 6) The operating documents will be accessible during UAS operations and made available to the Administrator upon request. Any revisions to the operating documents will be presented to the Administrator upon request.
- 7) Prior to each flight, the PIC will inspect the UAS to ensure it is in a condition for safe flight. If the inspection reveals a condition that affects the safe operation of the UAS, the UAS will not be operated until the necessary maintenance has been performed and the UAS is found to be in a condition for safe flight. The Ground Control Station will be included in the preflight inspection. All maintenance and alterations will be properly documented in the aircraft records.
- 8) Any UAS maintenance or alterations that affect the UAS operation or flight characteristics, e.g. replacement of a flight critical component, will undergo a functional test flight. The PIC who conducts the functional test flight will make an entry in the aircraft records.
- 9) The pre-flight inspection section in the operating documents will account for all discrepancies, i.e. inoperable components, items, or equipment, not already covered in the relevant sections of the operating documents.
- 10) We will follow the UAS manufacturer's aircraft/component, maintenance, overhaul, replacement, inspection, and life limit requirements.
- 11) We will carry out maintenance, inspections, and record keeping requirements, in accordance with the operating documents. Maintenance, inspection, and alterations will be noted in the aircraft records, including total flight hours, description of work accomplished, and the signature of the authorized person returning the UAS to service.
- 12) Each UAS operated will comply with all manufacturer Safety Bulletins.
- 13) An authorized person will make an entry in the aircraft record of the corrective action taken against discrepancies discovered between inspections.
- 14). The PIC will also meet the flight review requirements specified in 14 CFR 61.56 in an aircraft in which the PIC is rated on.
- 15) Prior to operations conducted for the purpose of aerial videography/cinematography and augmenting real estate listing videos (or similar operations), the PIC will have accumulated and logged, in a manner consistent with 14 CFR 61.51(b),
- 16) Prior to operations conducted for the purpose of aerial videography/cinematography and augmenting real estate listing videos (or similar operations), the PIC will have accumulated and logged, in a manner consistent with 14 CFR 61.51(b), a minimum of 5 hours as UAS pilot operating the make and model of the UAS to be used in operations.
- 17) The PIC will not operate the UAS for the purpose of aerial videography/cinematography and augmenting real estate listing videos (or similar

operations), unless the PIC 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 the operating documents, including evasive and emergency maneuvers and maintaining appropriate distances from people, vessels, vehicles and structures.

- 18) UAS operations will not be conducted during night, as defined in 14 CFR 1.1. All operations will be conducted under visual meteorological conditions (VMC).
- 19) The UA will not operate within 5 nautical miles of an airport reference point as denoted on a current FAA-published aeronautical chart.
- 20) The UA will 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.
- 21) If a UA loses communications or loses its GPS signal, it will return to a predetermined location within the planned operating area and land or be recovered in accordance with the operating documents.
- 22) The PIC will abort a flight in the event of unpredicted obstacles or emergencies in accordance with the operating documents.
- 23) The PIC will not begin a flight unless (considering wind and forecast weather conditions) there is enough power to fly at normal cruising speed to the intended landing point and land the UA with 30% battery power remaining.
- 24) We will obtain an Air Traffic Organization (ATO) issued Certificate of Waiver or Authorization (COA) prior to conducting any operations, and also request a Notice to Airman (NOTAM) not more than 72 hours in advance, but not less than 48 hours prior to the operation.
- 25) Before conducting operations, the radio frequency spectrum used for operation and control of the UA will comply with the Federal Communications Commission (FCC) or other appropriate government oversight agency requirements.
- 26) The documents required under 14 CFR 91.9 and 91.203 would be available to the PIC at the Ground Control Station of the UAS any time the UAS is operating. These documents will be made available to the Administrator or any law enforcement official upon request.
- 27) The UA will remain clear and yield the right of way to all manned aviation operations and activities at all times.
- 28) The UAS will not be operated by the PIC from any moving device or vehicle.
- 29) The UA will not be operated over congested or densely populated areas.
- 30) Flight operations will 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. We will 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 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, and;

- c. Operations nearer to the PIC, VO, operator trainees or essential persons do not present an undue hazard to those persons per § 91.119(a).
- 31) All operations will be conducted over private or controlled-access property with permission from the land owner/controller or authorized representative. Permission from land owner/controller or authorized representative will be obtained for each flight to be conducted.
- 32) Any incident, accident, or flight operation that transgresses the lateral or vertical boundaries of the operational area as defined by the applicable COA will be reported to the FAA's UAS Integration Office (AFS-80) within 24 hours. Accidents will be reported to

the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: www.ntsb.gov.

On behalf of Get Creative Group I would like to thank you for your consideration in granting this exemption. It will be an honor to hold this designation and I look forward to adding UAS video / photography offerings to my business portfolio.

Thank you for your consideration

Charles P. Rivbold J.

Charles P. Liebold Jr.

Get Creative Group 5803 Beckenham Way

Oak Ridge NC 27310

407 924-6956

chuck@getcreativegroup.com

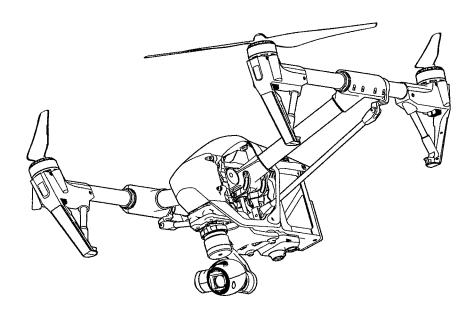
enclosures:

appendix 1: Inspire 1 Operation Manual

# INSPIRE T

User Manual (V1.0)

2014.12





#### **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.

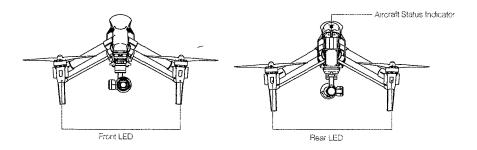
A mode (Attitude): The GPS and Vision Positioning System is not used for holding position. The aircraft only uses its barometer to maintain altitude. If it is still receiving a GPS signal, the aircraft can automatically return home if the Remote Controller signal is lost and if the Home Point has been 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	
RGGYRed, Green and Yellow Flash Alternatively	Power on and self-check
© Y Green and Yellow Flash Alternatively	Aircraft warming up
G 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)
Ý ······ Yellow Flashes Slowly	Safe to Fly (A mode but No GPS and Vision Positioning)
Warning	
Fast Yellow Flashing	Remote Controller Signal Lost
8 ······ Slow Red Flashing	Low Battery Warning
R ······ Fast Red Flashing	Critical Low Battery Warning
Red Flashing Alternatively	IMU Error
R — Solid Red	Critical Error
语文 ······ 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	₩ul	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 ( \hat{\hat{\hat{\hat{\hat{\hat{\hat{

#### Smart RTH

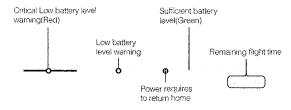
Using the RTH button on the remote controller (refer to "RTH button" on P28 for more information) or the RTH button in the DJI Pilot app when GPS is available to enables smart RTH. The aircraft return to the latest recorded Home Point, you may control the aircraft's orientation to avoid collision during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

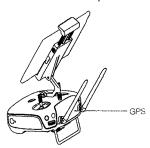




- Aircraft cannot avoid obstruction during the Failsafe RTH, therefore it is important to set an reasonable Failsafe altitude before each flight. Launch the DJI Pilot app and enter "Camera" view and select "MODE" to set the Failsafe altitude.
- Aircraft will stop ascending and immediately return to the Home Point if you move the throttle stick during the 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:



Δ

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.

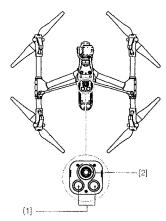
#### Setting Up Dynamic Home Point

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 " or reset the aircraft's coordinates as the new Home Point.
- 4. The aircraft status indicator blinks green to show Home Point is set succesfully.

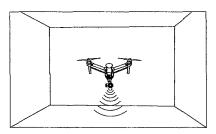
#### Vision Positioning System

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



#### 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.



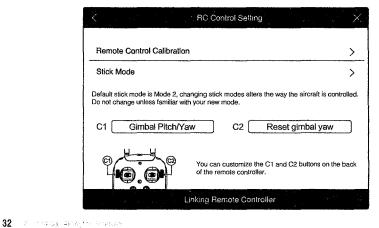
Status LED	Alarm	Remote Controller Status
® — Solid Red	<b>♪</b> chime	The remote controller set as "Master" but it is not connected with the aircraft.
© — Solid Green	♪ chime	The remote controller set as "Master" and it is connected with the aircraft.
P Solid Purple	D-D-	The remote controller set as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

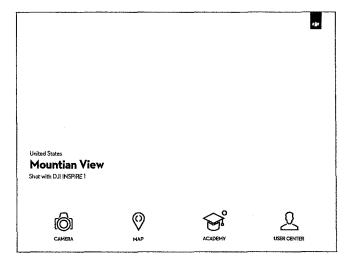
The remote controller is linked to your aircraft before delivery. Linking is only required when using a new remote controller for the first time. Follow these steps to link a new remote controller:

- 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.



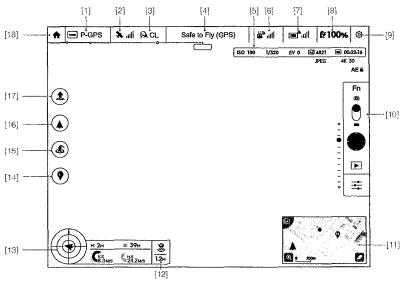
## **DJI Pilot App**

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

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

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

#### [3] IOC Settings

A 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

#### [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

#### [11] Map

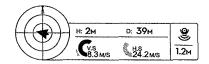
Display the flight path of the current mission. Tap to switch from the Camera GUI to the Map GUI.



#### [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.

### **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

- Do not use the aircraft in severe weather conditions. These include wind speed exceeding 10m/s, snow, rain and smog.
- 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.
- 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

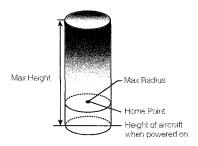
Flight limits on height and distance can be set. The details of these flight limits are described in the following section.

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.



	Flight Limits		DJI Pilot App	Aircraft Status Indicato
Max Height	Flight altitude must be the set height.	Flight altitude must be under the set height.		None.
Max Radius	Flight distance must be the max radius.		Warning: Distance limit reached.	Rapid red flashing **  when close to the max radius limit.
GPS Signal V	Veak ∰······Blinking Yellow	DJI Pilo	ot App	Aircraft Status Indicator
Max Height	Flight height restricted to 120m and under.	Warning: Height limit reached.		None.



Flight

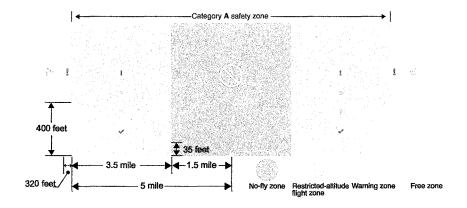
- If you fly out of the limit, you can still control the Inspire 1, but cannot fly it further.
- If the Inspire 1 flies out of the max radius in Ready to Fly (non-GPS) mode, it will fly back within range automatically.

#### Flight Restriction of Restricted Areas

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

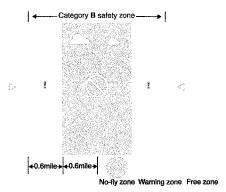
#### Category A Safety Zone

- (1) The category A "safety zone" is comprised of a small "no-fly zone" and a range of "restrictedaltitude zones". Flight is prevented in the "no-fly zone" but can continue with height restrictions in the restricted-altitude zone.
- (2) 1.5 miles (2.4 km) around a designated safety zone is a no-fly zone, inside which takeoff is prevented.
- (3) 1.5 miles (2.4 km) to 5 miles (8 km) around restricted areas are altitude restricted, with maximum altitude going from 35 feet (10.5 m) at 1.5 miles (2.4 km) to 400 feet (120 m) at 5 miles (8 km).
- (4) A "warning zone" has been set around the safety zone. When you fly within 320 feet (100m) of the safety zone, a warning message will appear on the DJI Pilot App.



#### Category B Safety Zone

- (1) Category B "safety zone" is comprised of a "no-fly zone" and a "warning zone".
- (2) 0.6 miles (1 km) around the safety zone is a designated "no-fly zone".
- (3) A "warning zone" has been set around the safety zone. When you fly within 0.6 miles (1Km) of this zone, a warning will appear on the DJI Pilot App.



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.

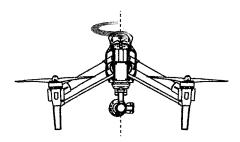


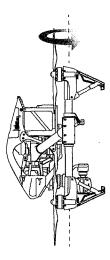
- DO NOT calibrate your compass where there is a chance of strong magnetic interference, such as magnetite, parking structures, and steel reinforcements underground.
  - . DO NOT carry ferromagnetic materials with you during calibration such as keys or cellular
  - · DO NOT calibrate beside massive metal 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.





Flight

If the Aircraft Status Indicator blinks red and yellow after the calibration, move your aircraft to a different location to carry out compass calibration.

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

#### When to Recalibrate

- 1. When compass data is abnormal, and the Aircraft Status Indicator is blinking red and yellow.
- 2. When flying in a new location, or a location that is different from your last flight.
- 3. When the mechanical structure of the Inspire 1 has changed, i.e. changed mounting position of the
- 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.

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

#### Video Suggestions and Tips

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

Flight

## **Appendix**

### Specifications

Aircraft		
Model	T600	
Weight (Battery Included)	2935 g	
Hovering Accuracy (P Mode)	Vertical: 0.5 m	
Hovering Accuracy (F Mode)	Horizontal: 2.5 m	
Max Angular Velocity	Pitch: 300°/s	
man raigatal valuary	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	
	Pitch: -90° to +30°	
Controllable Range	Pan: ±320°	
Mechanical Range	Pitch: -125° to +45°	
	Pan: ±330°	
Max Controllable Speed	Pitch: 120°/s	
·	Pan: 180°/s	

Name ХЗ FC350 Model 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"

20mm (35mm format equivalent) f/2.8 focus at ∞)

Lens 9 Elements in 9 groups

> Anti-distortion Single shoot

Burst shooting: 3/5/7 frames

Still Photography Modes Auto Exposure Bracketing (AEB): 3/5 bracketed frames at

> 0.7EV Bias Time-lapse

UHD (4K): 4096x2160p24/25, 3840x2160p24/25/30

Video Recording Modes FHD: 1920x1080p24/25/30/48/50/60

HD: 1280x720p24/25/30/48/50/60

Max Bitrate Of Video Storage 60 Mbps

FAT32/exFAT

Supported File Formats Photo: JPEG, DNG

Video: MP4/MOV (MPEG-4 AVC/H.264)

Micro SD

Supported SD Card Types Max capacity: 64 GB. Class 10 or UHS-1 rating required.

0° to 40° C Operating Temperature Range

Remote Controller

C1 Name

922.7MHz~927.7 MHz (Japan Only) Operating Frequency 5.728~5.850 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 **Output Power** 9 W

-10° to 40° C Operating Temperature Range

Less than 3 months: -20° to 45° C Storage Temperature Range

More than 3 months: 22° to 28° C

0-40° C Charging Temperature Range

Battery 6000 mAh LiPo 2S

Charger

Model A14-100P1A 26.3 V Voltage Rated Power 100 W

Battery (Standard)

Mobile Device Holder

Intelligent Flight Battery Name

TB47 Model Capacity 4500 mAh 22.2 V Voltage

LiPo 6S High voltage battery Battery Type

99.9 Wh Energy Net Weight 570 g

-10° to 40° C Operating Temperature Range

Less than 3 months: -20° to 45° C Storage Temperature Range 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** 5700 mAh Capacity 22.8 V Voltage Battery Type LiPo 6S 129.96 Wh Energy 670 g Net Weight Operating Temperature Range

-10 to 40° C

Less than 3 months: -20 to 45° C Storage Temperature Range More than 3 months: 22° to 28° C

0° to 40° C Charging Temperature Range

Max Charging Power

180 W

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

\* 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

Supported Mobile Devices

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	₩ul	Aircraft ←≥10m → Home Point
POI	Yes	<b>≯</b> ati	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.