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

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

June 2, 2015

Exemption No. 11736
Regulatory Docket No. FAA–2015–0855

Mr. Jaime Melgar
1031 19th Street, SW
Naples, FL 34117

Dear Mr. Melgar:

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 March 26, 2015, you petitioned the Federal Aviation Administration (FAA) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial videography and cinematography.

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 Phantom.

The petitioner requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*. In accordance with the statutory criteria provided in Section 333 of Public Law 112−95 in reference to 49 U.S.C. § 44704, and in consideration of the size, weight, speed, and limited operating area associated with the

aircraft and its operation, the Secretary of Transportation has determined that this aircraft meets the conditions of Section 333. Therefore, the FAA finds that the requested relief from 14 CFR part 21 and any associated noise certification and testing requirements of part 36, is not necessary.

The Basis for Our Decision

You have requested to use a UAS for aerial data collection[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, Mr. Jaime Melgar is granted an exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a), 91.7(a), 91.119(c), 91.121, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), to the extent necessary to allow the petitioner to operate a UAS to perform aerial data collection. This exemption is subject to the conditions and limitations listed below.

Conditions and Limitations

In this grant of exemption, Mr. Jaime Melgar is hereafter referred to as the operator.

[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.

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

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

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

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

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

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

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

7. This exemption and all documents needed to operate the UAS and conduct its operations in accordance with the conditions and limitations stated in this grant of exemption, are hereinafter referred to as the operating documents. The operating documents must be accessible during UAS operations and made available to the Administrator upon request. If a discrepancy exists between the conditions and limitations in this exemption and the procedures outlined in the operating documents, the conditions and limitations herein take precedence and must be followed. Otherwise, the operator must follow the procedures as outlined in its operating documents. The operator may update or revise its operating documents. It is the operator's responsibility to track such revisions and present updated and revised

documents to the Administrator or any law enforcement official upon request. The operator must also present updated and revised documents if it petitions for extension or amendment to this grant of exemption. If the operator determines that any update or revision would affect the basis upon which the FAA granted this exemption, then the operator must petition for an amendment to its grant of exemption. The FAA's UAS Integration Office (AFS−80) may be contacted if questions arise regarding updates or revisions to the operating documents.

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

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

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

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

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

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

14. The operator may not permit any PIC to operate unless the PIC demonstrates the ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption, including evasive and emergency maneuvers and maintaining appropriate distances from persons, vessels, vehicles and structures. PIC qualification flight hours and currency must be logged in a manner consistent with

14 CFR § 61.51(b). Flights for the purposes of training the operator's PICs and VOs (training, proficiency, and experience-building) and determining the PIC's ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption are permitted under the terms of this exemption. However, training operations may only be conducted during dedicated training sessions. During training, proficiency, and experience-building flights, all persons not essential for flight operations are considered nonparticipants, and the PIC must operate the UA with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

30. At least 3 days before aerial filming, the operator of the UAS affected by this exemption must submit a written Plan of Activities to the local Flight Standards District Office (FSDO) with jurisdiction over the area of proposed filming. The 3-day notification may be waived with the concurrence of the FSDO. The plan of activities must include at least the following:
    a. Dates and times for all flights;
    b. Name and phone number of the operator for the UAS aerial filming conducted under this grant of exemption;
    c. Name and phone number of the person responsible for the on-scene operation of the UAS;
    d. Make, model, and serial or N−Number of UAS to be used;
    e. Name and certificate number of UAS PICs involved in the aerial filming;
    f. A statement that the operator has obtained permission from property owners and/or local officials to conduct the filming production event; the list of those who gave permission must be made available to the inspector upon request;
    g. Signature of exemption holder or representative; and
    h. A description of the flight activity, including maps or diagrams of any area, city, town, county, and/or state over which filming will be conducted and the altitudes essential to accomplish the operation.

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

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

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

Sincerely,

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

Enclosures

March 26, 2015

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

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

Dear Sir or Madam,

I, Jaime Melgar, 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 I, Jaime Melgar, an owner and operator of small unmanned aircraft, be exempted from the Federal Aviation Regulations ("FARs") listed below so that I, Jaime Melgar, may operate my small ultra light weight unmanned aircraft system ("UAS") commercially in airspace regulated by the Federal Aviation Administration ("FAA").

As described herein I, Jaime Melgar, am a licensed Realtor within the State of Florida; experienced in flying hobby helicopters for recreational purposes. I have added a hobby grade quad-copter[1] UAS to my inventory equipped with a GoPro4+ Black camera with intent for aerial videography/cinematography to enhance academic community awareness for those individuals and companies unfamiliar with the geographical layout of the SW Florida and South Florida area, and augment real estate listing videos; following exemption and approval by the FAA. Thereby enhancing their academic research experience for the SW Florida and South Florida area.

I have flown small RC electric helicopters for over ten (10) years without incident. Committed to safety with each flight. My, Jaime Melgar's, exemption request would permit operation of ultra light weight, unmanned (piloted by remote control) and comparatively inexpensive UAS(s) in tightly controlled and limited airspace.[2] Predetermined in areas away from general public, airports, heliports and vehicular traffic for community videos, and within property boundaries for individual homeowner real estate listing videos/photos. Currently, similar lightweight, remote controlled UAS's are legally operated by unmonitored amateur hobbyists with no safety plan or controls in place to prevent catastrophe. I, Jaime Melgar, will continue to strictly comply with safety

[1] Appendix A – Phantom quad-copter Operator Manual
[2] Appendix B - SW Florida and South Florida area maps

and maintenance procedures included in all applicable UAS manufacturer's instructions and operating manuals to avoid and prevent public hazard, as well as manned aircraft hazards/catastrophe. This will act to further safety protocols exclusive to lightweight UAS's specific to real estate video and photography usage as I, Jaime Melgar, record flight data and other information gained through permitted flight operations to share with the FAA through any required FAA reports to assist with future protocol and safety regulation.

Granting my, Jaime Melgar's, request comports with the Secretary of Transportation's (FAA Administrator's) responsibilities and authority to not only integrate UAS's into the national airspace system, but to "...establish requirements for the safe operation of such aircraft systems [UAS's] in the national airspace system" under Section 333(c) of the Reform Act specific to the use of UAS's for real estate/Realtor purposes. Further I, Jaime Melgar, will conduct my operations in compliance with the protocols described herein or as otherwise established by the FAA.

For the reasons stated below I, Jaime Melgar, respectfully request the grant of an exemption allowing me to operate ultra light weight, remote controlled UAS's for academic community awareness to benefit/stimulate attraction to the SW Florida and South Florida area and to enhance real estate listing videos for homeowners who cannot afford expensive manned aircraft for the same purpose. Both of which will promote local economic growth through increased employment and increased tax base. Both with public safety in mind by keeping heavier manned aircraft containing combustible fuel that that poses potential public hazard.

I. Contact Information:

Jaime Melgar, Realtor®
1031 19th ST SW
Naples, FL 34117

II. The Specific Sections of Title 14 of the Code of Federal Regulations From Which Jaime Melgar Requests Exemption are:

14 CFR 21;
14 C.F.R. 45.23(b);
14 CFR 61.113 (a) & (b);
14 C.F.R. 91, et seq.;
14 CFR 407 (a) (1);
14 CFR 409 (a) (2); and,
14 CFR 417 (a) & (b).

III. The Extent of relief Jaime Melgar seeks and the Reason He Seeks Such Relief:

I, Jaime Melgar, submit this application in accordance with the Reform Act, 112 P.L. 95 §§ 331-334, seeking relief from any currently applicable FARs operating to prevent me, Jaime Melgar, contemplated commercial cinematic, academic and other flight operations within the national airspace system. The Reform Act in Section 332 provides for such integration of civil unmanned aircraft systems into our national airspace system as it is in the public's interest to do so. My, Jaime Melgar's, ultra light weight UAS meets the definition of "small unmanned aircraft" as defined in Section 331 and therefore the integration of my ultra light weight UAS is expressly contemplated by the Reform Act. I would like to operate my ultra light weight UAS prior to the time period by which the Reform Act requires the FAA to promulgate rules governing such craft. Thereby, providing direct experience and valuable information for formal regulation that can be administered uniformly to all real estate related UAS aerial video and photography. The Reform Act guides the Secretary in determining the types of UAS's that may operate safely in our national airspace system. Considerations include: The weight, size, speed and overall capabilities of the UAS's; Whether the UAS will be operated near airports or heavily populated areas; and, Whether the UAS will be operated by line of sight. 112 P.L. 95 § 333 (a). Each of these items reflect in favor of an exemption for me, Jaime Melgar. My UAS utilizes four (4) counter-rotating propellers for balance, control and stability. My UAS is equipped with GPS and auto return safety technology. Weighing less than five (5) pounds (far below the maximum 55 pound limit); including camera with gimbal.

I, Jaime Melgar, considers safety as foremost with each flight. My small unmanned aircraft is designed to hover in place via GPS and operate in less than a 24 knot (15 mph) wind. For safety, stability and fear of financial loss I will not fly in winds exceeding 16 kph (10 mph). Built in safety systems include a GPS mode that allows my UAS to hover in place when radio controls are released. With three modes to choose from, I utilize the *Smart Mode*[3] for aerial videography/photography. This is the safest, most reliable and stable mode to prevent accident and hazard. When pilot communication is lost UAS is designed slowly descend to point of take off. I do not operate my UAS near airports, Hospitals nor Police heliports, and do not operate near areas where general public is within fifty to one hundred (50-100) yards depending on location, conditions and weather. I am constantly on alert for any manned aircraft (Police/Medical helicopters, etc.) and prepared to land/abort immediately to the nearest and safest ground point should a manned aircraft approach my location or I suspect manned aircraft may approach near my location. My UAS is capable of vertical and horizontal operations, and are flown only within my line of sight of me, as the remote control pilot. Utilizing battery power rather than combustible fuels, flights generally last between three (3) to seven (7) minutes, with an altitude under one hundred fifty (150) feet. I, Jaime

[3] Smart Mode 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 Appendix A - Operator Manual.

Melgar, utilize a fresh fully charged battery with each flight as a safety precaution; full flight time limit for each battery is fifteen (15) to twenty-five (25) minutes as tested. I do not operate my UAS at or below manufacture recommend minimum charge levels for operation; preferring to remain well within a safe operating range to insure adequate communication between radio control and UAS to eliminate potential for crash, loss of control or hazard. Reserve batteries are at hand with each exercise to insure replacement for sufficient safe level of operation. I do not believe in taking risk that may cause a crash, that could create hazard to the public/property/manned aircraft, and have no desire to lose an investment. I have clocked numerous practice flights in remote areas as a hobbyist simulating flights for future commercial use to gain familiarization with the characteristics of this specific UAS's performance under different temperature and weather conditions. I also practice computerized simulated flights to maintain adequate skills and response reflex time. All for the sake of safety.

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

IV. How Jaime Melgar's Request Will Benefit the Public As A Whole:

Aerial videography for geographical awareness and for real estate marketing has been around for a long time through manned fixed wing aircraft and helicopters. For small budget real estate companies and average homeowners the expense of such aerial videography is cost prohibitive. Only large companies and high end Realtors or luxury homeowners can afford to absorb such expense. Depriving non -luxury homeowners and lower budget Realtors from a valuable marketing tool. Manned aircraft pose a threat to the public through potential catastrophic crash that the community has experienced in the past. Each resulting in loss of life. Each with combustible fuel that exploded and burned on impact. Police helicopters have made emergency hard landings within city limits. My, Jaime Melgar's, UAS pose no such threat since size and lack of combustible fuel alleviates any potential threat to the public.

Congress has already proclaimed that it is in the public's interest to integrate commercially flown UAS's into the national airspace system, hence the passing of the Reform Act. Granting my, Jaime Melgar's, exemption request furthers the public interest through academic/visual awareness of the geographical benefits in and around the metro Tucson area. My ultra light weight UAS is battery powered and creates no emissions that can harm the environment. The consequence of my ultra light weight UAS crashing is far less than a full size helicopter or fixed wing aircraft; which are heavy, contain combustible fuel and can cause catastrophic devastation to the public.

The public's interest is furthered by minimizing ecological and crash threat by permitting aerial video/photo capture through my battery operated ultra light weight UAS's. Permitting me, Jaime Melgar, to immediately fly within national air space furthers economic growth. Granting my exemption request substantially furthers the economic impact for the community for companies looking to relocate or build in the SW Florida and South Florida area as well as individuals looking to relocate for career advancement through academic and geographical awareness. Both of which serve as a stimulus to the community.

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

My, Jaime Melgar's, exemption will not adversely affect safety. Quite the contrary, for the reasons stated permitting me, Jaime Melgar, to log more flight time in FAA controlled airspace, with communication with the FAA, will allow me to contribute to the innovation and implementation of new and novel, as of yet undiscovered safety protocols for Realtors that can be embraced by the NAR[6], AAR[7], and TAR[8] for development in cooperation with the FAA. In addition I, Jaime Melgar, submit the following representations of enhancements to current aerial videography and photography for real estate:

- My UAS weighs less than 5 pounds complete with a small ultra light weight high quality GoPro 4+ Black camera;
- I only operate my UAS below 200 feet (well within the 400 foot permissible ceiling set by the FAA Modernization and Reform Act of 2012);
- my UAS only operate for 20-25 minutes per flight;
- I land my UAS prior to manufacturer recommended minimum level of battery power;
- I pilot my UAS through remote control only by line of sight;
- My UAS has GPS a flight safety feature whereby it hovers and then slowly lands if communication with the remote control pilot is lost;
- I actively analyze flight data and other sources of information to constantly update and enhance safety protocols;
- I only operate in reasonably safe environment that are strictly controlled, are away from power lines, elevated lights, airports and actively populated areas;
- I conduct extensive pre-flight inspections and protocol, during which safety carries primary importance;
- I always obtains all necessary permissions prior to operation; and,
- I have procedures in place to abort flights in the event of safety breaches or potential danger.

[4] National Association of Realtors, http://www.realtor.org/
[5] Florida Association of Realtors, http://www.floridarealtors.org/
[6] Naples Area Board of Realtors, http://www.nabor.com/

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

- First, the potential loss of life is diminished because UAS's carry no people on board and I only operates my UAS in specific areas away from mass populations.
- Second, there is no fuel on board a UAS and thus the potential for fire or explosions is greatly diminished.
- Third, the small size and extreme maneuverability of my UAS allow me to remotely pilot away from and avoid hazards quickly and safely.
- Lastly, given its small size and weight, even when close enough to capture amazing images, my UAS need not be so close to the objects they are focused on through the technology and use of post editing software allowing pan and zoom.

Accordingly, my UAS has been experimentally operated for familiarization/competency and will continue to operate at and above current safety levels.

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

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

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

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

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

safety/flight manual delineating areas of where safety can be defined.[10] The FAA has previously issued exemptions to this regulation in Exemption Nos. 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, 10700 and 32827.

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

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

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

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

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

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

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

14 C.F.R. § 91.119 prescribes safe altitudes for the operation of civil aircraft. It allows helicopters to be operated at lower altitudes in certain conditions. My UAS will never operate at an altitude greater than 200 AGL; safely below the standard of 400 AGL. I, Jaime Melgar, will however operate my UAS in safe areas away from public and traffic, providing a level of safety at least equivalent to or below those in relation to minimum safe altitudes. Given the size, weight, maneuverability and speed of my UAS, an equivalent or higher level of safety will be achieved.

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

[10] Appendix E - Safety/Flight Manual

> The above- cited Regulations require, amongst other things, aircraft owners and operators to "have [the] aircraft inspected as prescribed in subpart E of this part and shall between required inspections, except as provided in paragraph (c) of this section, have discrepancies repaired as prescribed in part 43 of this chapter. . . ."

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

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

In summary, Jaime Melgar seeks an exemption from the following Regulations:

14 C.F.R. 21, subpart H; 14 C.F.R. 45.23(b); 14 C.F.R. §§ 61.113 (a) & (b); 14 C.F.R. § 91.7 (a); 14 C.F.R. § 91.9 (b)(2); 14 C.F.R. § 91.103(b); 14 C.F.R. § 91.109; 14 C.F.R. § 91.119; 14 C.F.R. § 91.121; 14 C.F.R. § 91.151(a); 14 C.F.R. §§ 91.203(a) and (b); 14 C.F.R. § 91.405 (a); 14 C.F.R. § 91.407 (a)(1); 14 C.F.R. § 91.409 (a)(2); 14 C.F.R. § 91.409 (a) (2); and, 14 C.F.R. §§ 91.417 (a) & (b) to commercially operate my, Jaime Melgar's, small unmanned vehicle/lightweight unmanned aircraft vehicle in community awareness and real estate operations, and to develop economic platforms for real estate to enhance the experience of those seeking to relocate to the metro Tucson area. Currently, area awareness and real estate aerial videography/photography relies primarily on the use of larger aircraft running on combustible fuel. Posing potential risk to the public. Granting my, Jaime Melgar's, request for exemption will reduce current risk levels and thereby enhance safety. My UAS craft do not contain potentially

explosive fuel, is smaller, lighter and more maneuverable than conventional real estate video and photographic aircraft with much less flight time. Further, I operate at lower altitudes and in controlled airspace eliminating potential public risk flying to and from established air fields. I, Jaime Melgar, have been informally analyzing flight information and will compile safety protocols and the implementation of a flight operations manual for real estate usage that exceeds currently accepted means and methods for safe flight. Formal collection of information shared with the FAA will enhance the FAA's internal efforts to establish protocols for complying with the FAA Modernization and Reform Act of 2012. There are no personnel on board my, Jaime Melgar's, UAS and therefore the likelihood of death or serious bodily injury is significantly diminished. My, Jaime Melgar's, operation of my UAS, weighing less than 5 pounds and travelling at lower speeds within limited areas will provide an equivalent level of safety as that achieved under current FARs. Accordingly I, Jaime Melgar, respectfully request that the FAA grant my exemption request and am willing to cooperate in sharing information to benefit the FAA, safety of manned aircraft, and the general public at large.

Respectfully submitted,

Jaime Melgar, Realtor®
1031 19th ST SW
Naples, FL 34117

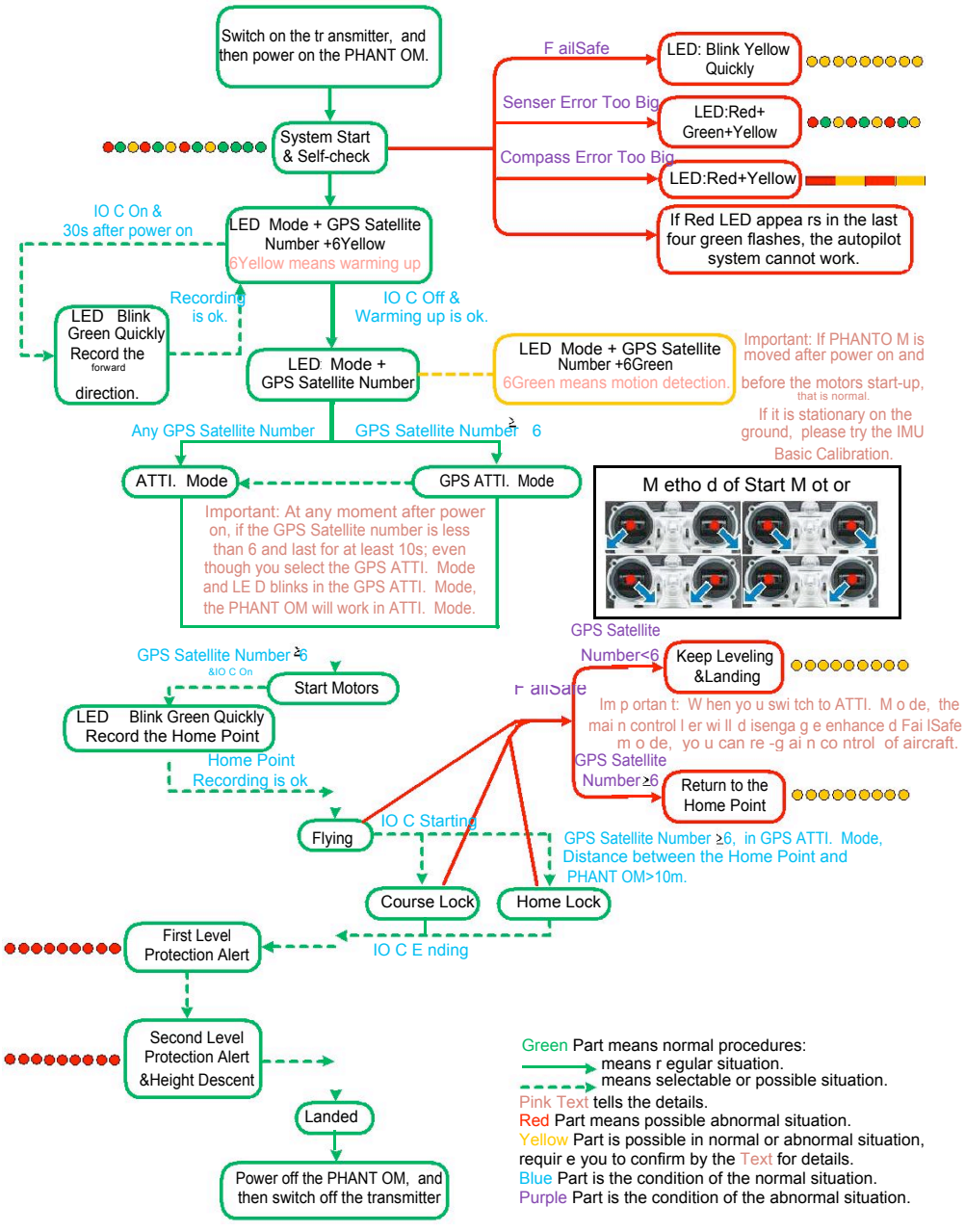
Appendix A

Phantom Quad Copter

Operator Manual

PHANTOM Flying Flowchart V1.0 (Simplified Version)

This flowchart is aiming at help you to get familiar with the flying procedures of PHANT OM, please read the Manual carefully to get the operation details. Its corresponding Firmware Version is V3.0.



PHANTOM Quick Start Manual V1.7

2013.09.25 Revision

For NAZA-M Firmware V3.12

& Assistant Software V2.12

Thank you for purchasing our product. Please visit the DJI website, PHANTOM section to confirm if the printed manual is the latest one according to the manual version. If not, please download and refer to the latest manual.

Please read the entire manual strictly and follow these steps to use you product. The manual will get you ready to fly by doing simple operations. You can get an advanced manual from DJI website to learn more about PHANTOM, for example, configuring parameters by connecting to assistant software, changing the transmitter to Mode1, matching frequency between the transmitter and the receiver, etc.

Make sure to use the NAZA-M assistant software of 2.0 version (or above 2.0) to carry out firmware upgrade and parameter configuration. DO NOT use the NAZA-M assistant software bellow 2.0 version.

Note: The built-in autopilot system is NAZA-M; you can obtain the current NAZA-M Firmware Version according to the Assistant Software. If you ever upgrade your NAZA-M Firmware, please carefully read the corresponding NAZA-M release note and NAZA-M quick start guide.

www.dji.com

Content

Disclaimer & Warning

Please read this disclaimer carefully before using the PHANTOM. By using this product, you hereby agree to this disclaimer and signify that you have read them fully. THIS PRODUCT IS NOT SUITABLE FOR PEOPLE UNDER THE AGE OF 18.

PHANTOM is an excellent flight platform offering an excellent flight experience, only if it is powered normally and in a good working condition. Despite the PHANTOM having a built-in autopilot system and our efforts in making the operation of the controller as safe as possible when the main power battery is connected, we strongly recommend users to remove all propellers when calibrating and setting parameters. Make sure all connections are good, and keep children and animals away during firmware upgrade, system calibration and parameter setup. DJI Innovations accepts no liability for damage(s) or injuries incurred directly or indirectly from the use of this product in the following conditions:

1. Damage(s) or injuries incurred when users are drunk, taking drugs, drug anesthesia, dizziness, fatigue, nausea and any other conditions no matter physically or mentally that could impair your ability.
2. Damage(s) or injuries caused by subjective intentional operations.
3. Any mental damage compensation caused by accident.
4. Failure to follow the guidance of the manual to assemble or operate.
5. Malfunctions caused by refit or replacement with non-DJI accessories and parts.
6. Damage(s) or injuries caused by using third party products or fake DJI products.
7. Damage(s) or injuries caused by mis-operation or subjective mis-judgment.
8. Damage(s) or injuries caused by mechanical failures due to erosion, aging.
9. Damage(s) or injuries caused by continued flying after low- voltage protection alert is triggered.
10. Damage(s) or injuries caused by knowingly flying the aircraft in abnormal condition (such as water, oil, soil, sand and other unknown material ingress into the aircraft or the assembly is not completed, the main components have obvious faults, obvious defect or missing accessories).
11. Damage(s) or injuries caused by flying in the following situations such as the aircraft in magnetic interference area, radio interference area, government regulated no-fly zones or the pilot is in backlight, blocked, fuzzy sight, and poor eyesight is not suitable for operating and other conditions not suitable for operating.
12. Damage(s) or injuries caused by using in bad weather, such as a rainy day or windy (more than moderate breeze), snow, hail, lightning, tornadoes, hurricanes etc.
13. Damage(s) or injuries caused when the aircraft is in the following situations: collision, fire, explosion, floods, tsunamis, subsidence, ice trapped, avalanche, debris flow, landslide, earthquake, etc.
14. Damage(s) or injuries caused by infringement such as any data, audio or video material recorded by the use of aircraft.
15. Damage(s) or injuries caused by the misuse of the battery, protection circuit, RC model and battery chargers.
16. Other losses that are not covered by the scope of DJI Innovations liability.

Cautions for Product Use

Please check the following steps carefully every time before flight.

1. Before use of the product, pl ease accept some flight training (Using a simul ator to practice flying, getting instruction from a professional person, etc.).
2. Check tha t all parts of the mul ti-rotor are in good condition before flight. Do not fly with aging or broken parts.
3. Check tha t the propell ers and the motors are install ed correctly and firmly before flight. Ma ke sure the rotation direction of each propell er is correct. Do not get cl ose to or even touch the working motors and propell ers to avoid serious injury.
4. Do not over load the mul ti-rotor (should be less than 120 0g).
5. Ma ke sure that the transmitter battery and flight battery are fully charged.
6. Try to avoid interf erence between the remote control transmitter and other wirel ess equipment.
7. Ma ke sure to switch on the transmitter first, then power on the multi-rotor before takeoff! Power off the mul ti-rotor first, then switch off the transmitter after landing!
8. The fast rotating propellers of PHANT OM will cause serious damage and injury. Always fly the mul ti-rotor 3m or above away from you and unsafe conditions, such as obstacl es, crowds, high-voltage lines, etc. FLY RESPO NSIBLY.
9. All parts must be kept out of the reach of chil dren to avoid C H OKE HAZARD; if a child accidentally swall ows any part you shoul d immediately seek medical assistance.
10. Please always keep the compass module away from the magnet. Otherwise it may damage the compass modul e and l ead the aircraft to work abnormally or even be out of control.
11. D O N O T use the PHANTOM transmitter (receiver) with the other third party remote control equipment.
12. Ma ke sure to use the NAZA-M assistant software of 2. 0 version (or above 2. 0) to carry out firmware upgrade and parameter configuration. DO N O T use the NAZA-M assistant software bell ow 2. 0 version.
13. The buil t-in ES Cs of PH ANT OM O NLY support 3S (11.1V) power supply.
14. O NLY use the DJI original motor and 8-inch propell er.
15. If you want to put the PHANTOM in a car, please keep it away from the speaker, since the compass modul e may be magnetized.
16. D O N O T use the magnetic screwdriver. Otherwise, keep the screwdriver a t l east 10cm away from the compass modul e, to avoid magnetic interf erenc e.
17. If you use your own equipment(for exampl e: GoPro3), pl ease make sure the WiFi function is disabl ed, to avoid the interference on the transmitter, which may cause the PHANT OM to FailSaf e, crack and or even to fly away.
18. For Ma c user, please install Windows Parall el to run assistant software.

If you have any problem you cannot solve during installation, please contact a DJI Authorized Deal er.

Trademarks

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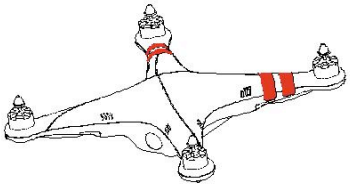
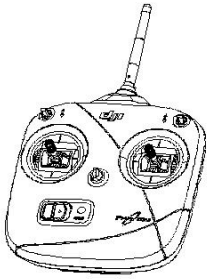
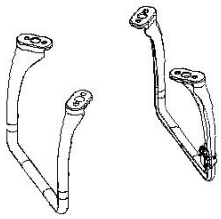
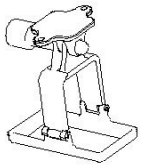
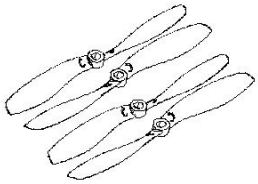
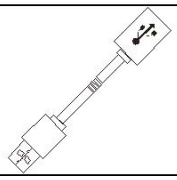
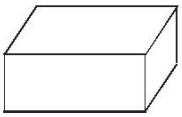
Battery Usage & Charging Cautions

1. Do not put the ba ttery into water; store the ba ttery in a cool and dry environment.
2. Only use the correctly specified batteries
3. Ba tteries must be kept out of the rea ch of chil dren; if a chil d a ccidentally swallows the battery you shoul d immediately seek medica l assistance.
4. Do not use or store the battery near fire.
5. Ba ttery shoul d be charged with proper standard charger.
6. Do not connect the ba ttery reversed in positive and nega tive termina ls in the charger or equipment.
7. Do not connect the battery directly to the wa ll plugs or vehicl e-mounted socket.
8. Do not put the ba ttery into a fire or heat the ba ttery.
9. Do not l et the battery termina ls (+and-) touch together to cause short-circuit.
10. Do not transport or store the battery together with metal objects.
11. Do not hit or throw the battery.
12. Do not wel d the ba ttery terminals together.
13. Do not drive a nail in, hit with a hammer, or stomp on the battery.
14. Do not disassembl e or al ter the ba ttery.
15. Do not use or store the battery in extreme heat environments, such as direct sunlight or in the car in hot weather. Otherwise, the battery will overhea t, may cause fire (or self-ignite), this will affect the performance of the battery, shorten the service lif e of the battery.
16. Do not use the ba ttery in strong el ectrostatic areas, otherwise the electronic protection may be damaged which may cause a haza rd.
17. If you get the ba ttery electrolyte l ea kage into your eyes, don't rub, first wash your eyes with cl ean wa ter then seek medica l assistance immedia tely. If not handled in a timely manner, eyes coul d be damaged.
18. Do not use the battery when it emits an odour, high temperature, deforma tion, change in col our or other abnorma l phenomena; if the battery is in use or cha rging, you shoul d stop cha rging or using immedia tely.
19. If the ba ttery termina l gets dirty, please cl ean it with a dry cloth before using. Otherwise it will cause a poor contact, thus causing energy l oss or inability to charge.
20. Discarded battery could lead to a fire; you shoul d compl etely discharge the battery and wrap the output terminal with insul ating tape before disca rding.
21. D O N OT drain the ba ttery of phantom or l eave the battery plugged into the PHANTO M when unused. When there is l ow voltage a lert pl ease l anding timely to avoid damages to the ba ttery or others.

In the Box

Aircraft	Transmitter	Landing Gear (with Compass Modul e)
		
Frame for C amera	Propell ers	Assistant Wrench
		
USB C abl e	Screw Packa ge (M3x6)	Accessory
		

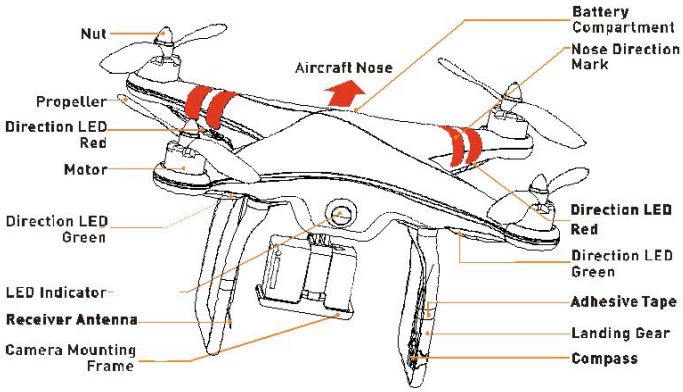
Required Items

Phillips Screwdriver	5# AA Batteries
	

Introduction

The PH ANTOM is an all-in-one small Quad Copter designed for mul ti-rotor enthusiasts. Before shipping from the factory, it has been configured and fully tested, which means you have no configuration to do.

- Built-in
  - ✓ NAZA-M Autopil ot System
    (Refer to NAZA-M manual for details)
  - ✓ GPS & Compass Modul e
  - ✓ R/ C Receiver
  - ✓ Power System for Flight
  - ✓ LED Indicator
  - ✓ USB Interface
    (in the Ba ttery Compartment)
- Function
  - ✓ ATTI. / GPS ATTI. Mode
  - ✓ Intelligent O rientation Control
  - ✓ Enhanced Fail-Safe
  - ✓ Low-Vol tage Al ert
- C amera Frame (For GoPro)
- Takeoff Weight:<120 0g



- ✓ Working Frequency: 2. 4GHz ISM
- Control Channel Numbers of Transmitter: 7
- ✓ Communication Distance: 10 0 0m
- ✓ Receiver Sensitivity(1%PER):

Aircraft & Transmitter - Basic Operation

Definitions

- Stick neutral position and stick released means the stick of Transmitter is pushed to the central position.
- Command Stick means the stick of Transmitter is pushed away from the central position.

Before Flying

1. Installing the Transmitter Batteries

1. Open the battery compartment cover of the Transmitter.
2. Install 4x AA battery (5#) in accordance with the + / - pole.
3. C l ose the battery compartment cover of the Transmitter.

- D O N O T use the PHANT OM transmitter (receiver) with the other third party remote control equipment.
- Risk of explosion if repl aced by an incorrect type.
- Dispose of used batteries a ccording to the instructions.
- Remove the batteries after use.
- When the voltage is lower than 4V, the transmitter will alarm with sound of "EE.....", please change the batteries.

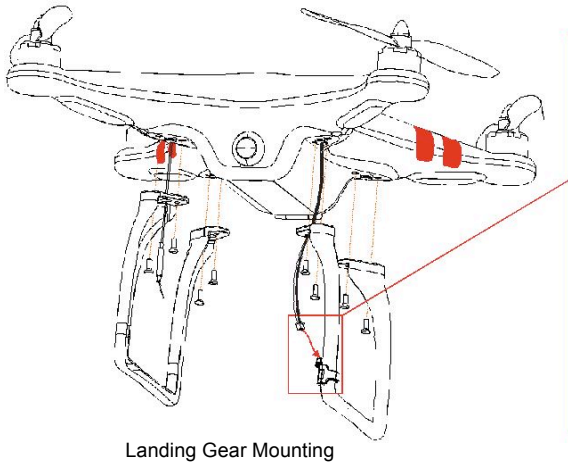
2. Battery Charging - LiPo Battery

Please use the full charged battery of 3S LiPo.
(Recommended parameters: 733496 - 220 0MAH-20 C

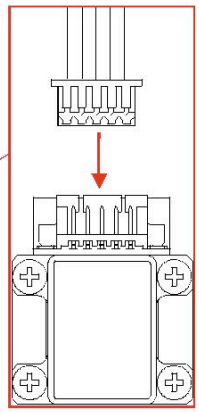
4. Mount the Landing Gear with the Compass Module if Required

If the GPS ATTI. Mode is desired, you must first mount the l anding gear which contains the Compass Module.

1. Prepare the aircraft and the l anding gear.
2. Mount the landing gear with the Compass Modul e to the right part (shown as the foll owing chart); make sure the 5-pin cabl e is through the hole of the l anding gear. Fix the landing gear with screws (M3x6), and then connect the 5-pin cable to the Compass Modul e.
3. Mount the other l anding gear to the l eft part.
4. Fix the antenna and the 5-pin cable on both l anding gear by using the white adhesive tape.



Landing Gear Mounting



Compass Modul e Connecting

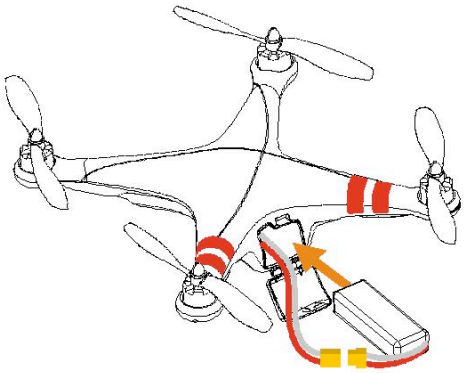
- When flying, pl ease make sure the compass module is stationary and firm.
- If the Landing Gear with the compass modul e mount on has been deformed, pl ease repl ace it with a new one and mount it as the procedures above.
- The compass modul e is not wa terproof, and not anti-oil.
- D O N O T use the magnetic screwdriver. Otherwise, keep the screwdriver at l east 10cm away from the compass modul e, to avoid magnetic interf erenc e.

5. Turn on the Transmitter

1. Set the l O C and Control Mode switch to the top position.
2. Turn on the power switch of the Transmitter

6. Power on the Aircraft

1. Pla ce the aircraft on the ground
2. Open the battery compartment cover of the aircraft.
3. Put the battery into the compartment with the power cord fa cing outward.
4. Connect the battery and aircraft by the power lead and make sure the ESC's work properly. (Correct sound:
5. Keep the sticks of the Transmitter and the Aircraft stationary until the system start and sel f-check has finished ().
6. Put the power cabl e into the ba ttery compartment.
7. C l ose the battery compartment cover.
8. The LED may blink Yell ow 4 times quickly (). Start motor is disabl e during LED blinking Yell ow 4 times quickly (), as the system is warming up.



Notes

- Please contact your deal er if the "System start and self-check LED flashes" are not correct (Red LED appears in the l ast four green flashes) in the Step5.
- After the system start and sel f-checking has finished, if the LED blinks Red, Yell ow and Green continually, that means the IMU da ta is a bnormal. The PH ANTOM will not work, pl ease connect to the Assistant Software and follow the tips to do operation. If it blinks red and yell ow lights al terna tely (), that means the compass error is too big, it can be caused by the foll owing three cases. Pl ease connect to the Assistant Software, select the "tools" tab and follow the tips of the "IMU Calibration" to do operation.

  1. There are f erromagnetic substance around; first make sure that the compass has been calibra ted correctly, you can lift the aircraft up (about 1m from the ground), and stay away from the surrounding possibl e f erromagnetic material object, if there is no red and yell ow fl ashing after lifting it up about 1m from the ground, then it will not aff ect the flight.
  2. The compass module had been put near a magnet; in this situation pl ease timely repla ce the compass for a new one, otherwise it will l ead to some abnormal a ction, or even l oss of control.
  3. The compass is not properly calibra ted; in this situa tion pl ease calibrate the compass correctly again, pl ease see the GPS compass calibration for details.

7. GPS & Compass Calibration

If the C ompass Modul e is not used, you can skip this step.

The GPS module has a built-in magnetic fiel d sensor for measuring the geomagnetic field, which is not the same in diff erent areas. The GPS module will not work unless the Compass Modul e has been connected. Make sure the Compass Module connections are correct.

Please always keep the compass modul e away from the magnet. If this situation occurs please change the compass modul e before flying. Otherwise it may damage the compass modul e and lead the aircraft to work abnormally or even be out of control.

C alibrate the compass before the first flight or when flying in a diff erent area. Make sure to keep away from f erromagnetic substance and other el ectronic equipment when calibrating or flying. If you keep having calibration failure, it might suggest that there is ma gnetic interference or other f erromagnetic substance, pl ease avoid flying in this area.

If you have calibration failure or the LED blinks red and yell ow lights al ternately ( ), please connect to the Assistant Software, select the " Tools" tab and follow the tips of the "IMU Calibration" to do operation

1. Quickly switch the control mode switch from *ATTI Mode* to *GPS ATTI Mode* and back to *ATTI Mode* for 6 to 10 times, The LED indicator will turn to constantly yell ow.
2. Rotate your aircraft around the horizontal axis (about 360 °) until the LED changes to constant green, and then go to the next step.
3. Hol d your aircraft vertically and rotate it (its nose is downward) around the vertical axis (about 360 °) until the LED turns off, meaning the calibra tion is finished.
4. If the calibra tion was successful, calibration mode will exit automatically. If the calibration has fail ed, the LED keeps flashing quickly Red. Switch the control mode switch one time to cancel the calibration, and then re-start from step 1.

ATTI. Mode->GPS ATTI. Mode ->
ATTI. Mode is one time

Flight Test

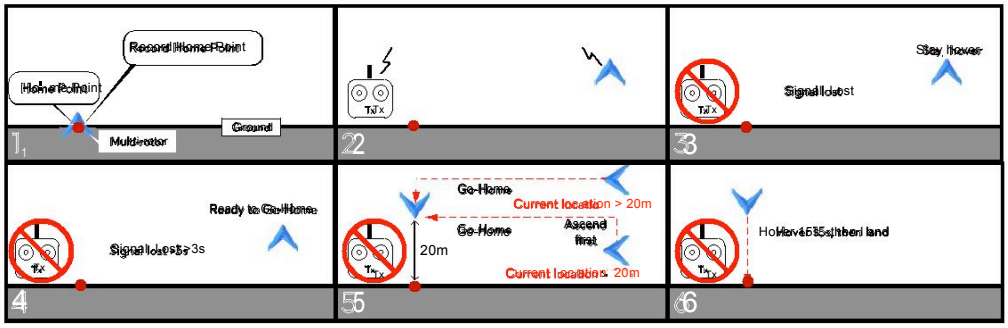
1. If in GPS ATTI. Mode, place the aircraft in an open space without buildings or trees. Take off the aircraft after 6 or more GPS satellites are found (Red LED blinks once or no blinking). If in ATTI. Mode, you can skip this step.
2. Place the aircraft 3 meters away from you and others, to avoid accidental injury.
3. Start-up
   - ✓ Switch on the transmitter first, then power on multi-rotor! Keep the aircraft stationary until the system start and self-check has finished.
   - ✓ Please wait for the system to warm up gradually with the LED blinks Yellow 4 times quickly(). You should not start the motors until the blinking disappears.
   - ✓ Keep the aircraft stationary, and execute the CSC to start the motors.

   - ✓ Release the yaw, roll and pitch sticks and keep them at the neutral position, at the same time raise the throttle stick from the bottom. The motors will stop if you do not push the throttle stick from the bottom within 3 sec and you will need to re-start the motors.
   - ✓ Keep raising the throttle stick until all the rotors are working, push the throttle stick to the mid position and then take-off your multi-rotor gently, pay attention not to push the stick excessively.
   - ✓ Pay attention to the aircraft movement at any time, and use the sticks to adjust the aircraft's position. Keep the yaw, roll, pitch and throttle sticks at the mid position to hover the aircraft at desired height.
4. Lower the aircraft slowly until touch down is achieved. The motors will stop automatically after 3 seconds, or you can repeat the start-up stick command to stop the motors sooner.
5. Please always power off the aircraft first, and then switch off the transmitter after landing.

FLYING NOTES

The flowchart of failsafe and how to regain control

An introduction of Go-Home and Landing.



Home point: Every time you power on, after first motors start, and if 6 or more GPS satellites are found (Red light blinks once or no blinking) for 10 seconds, the current position of mul ti-rotor will be saved as home-point by MC automa tically.

Note	1. Please make sure to record the home-point during flight, and cl early know where it is. 2. During go-home the nose direction of the aircraft is facing toward the home-point, and the aircraft is flying directly from the current position to the home-point.

Low-Voltage Alert

Low- Voltage Alert is to indicate that the battery cannot provide enough power for the aircraft, in order to warn you to land the aircraft ASAP. There are both first level and second level protections. It is not for fun, you should land your aircraft ASAP to prevent your aircraft from crashing or other harmful consequences!!!

In ATTI. Mode & GPS ATTI. Mode.

- ✓ The first level protection has LED warning.
- ✓ During second level protection the aircraft will land automatically with LED warning. Meanwhile the center point of throttle stick will move up slowly to 90% of endpoint, you should land ASAP to prevent your aircraft from crashing! When the center point is at 90% of endpoint, aircraft will still ascend slowly if you continue to pull the throttle stick, and the control of Pitch, Roll and Yaw are the same as before.

(1) Configure the FailSafe function in the assistant software → "Advanced" → "F/S" and read the instruction thoroughly and carefully.

(2) Configure the Low-Voltage Alert function in the assistant software → "Advanced" → "Voltage" and read the instruction thoroughly and carefully.

LED Description

System Status	LED Flashing
System start and self-check	
IMU abnormal data	
Warm up after power on	
Bias of Sensors too Big	
Compass Error too Big	
Tx signal lost	
Low Voltage Alert	
Record forward direction or home point	
Control Mode Indictor	Manual Mode: None ATTI. Mode:  (stick(s) not at center ) GPS Mode:  (stick(s) not at center ) IOC Mode:  (stick(s) not at center )
GPS Signal State Indicator	

Compass Calibration	LED Flashing
Begin vertical calibration	
Calibration or others error	

ESC Sound Introduction

ESC State	Sound
Ready	1234567
Throttle stick is not at bottom	BBBBBB..
Input signal abnormal	B--------B-----B..
Input voltage abnormal	BB---BB---BB-BB...

Transmitter State Introduction

Transmitter State	Introduction
The throttle stick isn't at the lowest position after turning on may alarm.	B-----BBB
Linking between the Transmitter and the Receiver	
Normal Operation	
Low-battery Alert (Need to change the battery)	E-E.....

Specifications of the Aircraft

Parameters	Range
Operating Temperature	-10° C ~ 50° C
Power Consumption	3.12W
Supported Battery	ONLY 3S LiPo
Take-off Weight	<1200g
Hovering Accuracy (GPS Mode)	Vertical: ± 0.8m. Horizontal: ± 2.5m
Max Yawing Velocity	200°/s
Max Tilt Angle	35°
Max Ascent / Descent Speed	6m/s
Max Flight Velocity	10m/s
Diagonal distance (motor center to motor center)	350mm
Weight	670g
Weight(with Battery)	800g

CE Statement

Due to the used enclosure ma terial, the device shall only be connected to a USB Interface of version 2. 0 or higher. The connection to so call ed power USB is prohibited.

C AUTI O N RISK O F EXPLOSI O N IF BATTERY IS REPLAC ED BY AN IN C ORRECT TYPE. DISPOSE O F USED BATTERIES AC C ORDIN G TO THE INSTRUCTIO NS.

Hereby, DJI Innova tions Corporation decl ares that this device is in compliance with the essential requirements and other rel evant provisions of Directive 1999/5/EC .

CE 0700

FCC Statement

This equipment complies with F C C RF ra diation exposure limits set forth for an uncontrolled environment.

This device complies with part 15 of the F C C rul es. Opera tion is subject to the foll owing two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interf erence received, including interf erence tha t may cause undesired operation.

NOTE: The manufa cturer is not responsibl e for any radio or TV interf erenc e caused by unauthorized modifications or changes to this equipment. Such modifications or changes could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a C lass B digital device, pursuant to part 15 of the F C C Rul es. These limits are designed to provide reasonabl e protection a gainst harmful interf erence in a residential install ation. This equipment generates uses and can radiate radio frequency energy and, if not install ed and used in accordance with the instructions, may cause harmful interf erence to radio communications. However, there is no guarantee that interference will not occur in a particul ar installa tion. If this equipment does cause harmful interf erence to radio or tel evision reception, which can be determined by turning the equipment off and on, the user is encoura ged to try to correct the interf erence by one or more of the foll owing measures:

- Reorient or reloca te the receiving antenna.
- Increase the separa tion between the equipment and receiver.
- Connect the equipment into an outl et on a circuit diff erent from that to which the receiver is connected. - Consul t the deal er or an experienced radio /TV technician for hel p.

PHANTOM

Advanced Manual

V 1.4

2013.03.22 Revision

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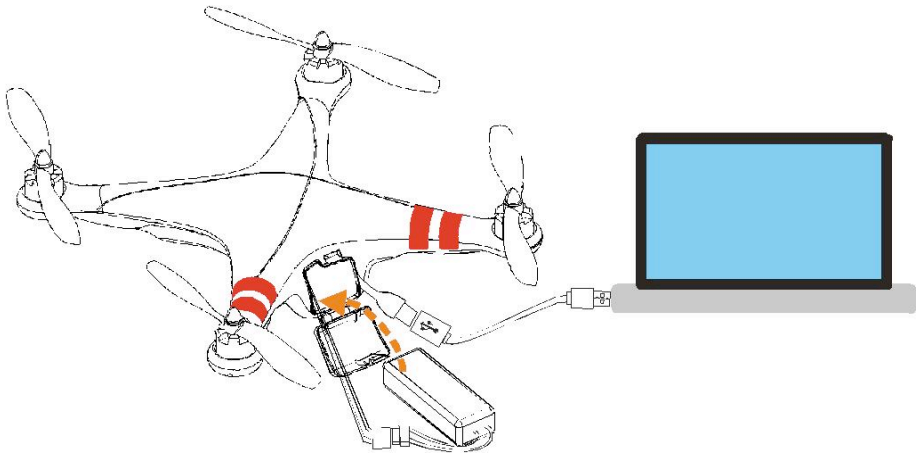
A1 Software and Driver Installation

Make sure to use the NAZA-M assistant software of 2.0 version (or above 2.0) to carry out firmware upgrade and parameter configuration. DO NOT use the NAZA-M assistant software bellow 2.0 version.

1. Please download the driver DJI Driver Installer and NAZA-M assistant software from the PHANTOM page of DJI website (http://www.dji-innovations.com/products/phantom/downloads/).
2. Connect the PHANTOM and the PC via the USB cable, power on the PHANTOM system.
3. Run the DJI Driver Installer and follow the instructions strictly to finish installation.
4. Run the assistant software installer, and follow the instructions strictly to finish installation.



A2 Configuration and Firmware& Software Upgrade

1. Power on your computer. Make sure the computer is connected to the Internet for the first time you use.
2. Switch on the transmitter first, then power on the aircraft. Connect the aircraft to the PC with the USB cable. DO NOT break the connection until configuration or upgrade is finished.
3. Please refer to the "**Assembly &Configuration**->Step3" section of NAZA-M Quick Start Guide to get the detail of assistant software usage.
4. Refer to the "**Appendix**-> Firmware & Assistant Software Upgrade" section of NAZA-M Quick Start Guide to get the detail of assistant software usage.
5. If Manual Mode is required, please select "Manual" from the drop down list of Basic->RC->Control Mode Switch in the assistant software. Refer to the "**Flying Test**-> Step 1 Control Mode Knowledge" section of NAZA-M Quick Start Guide to get the detail about the Manual Mode.

A3 Linking the Transmitter and

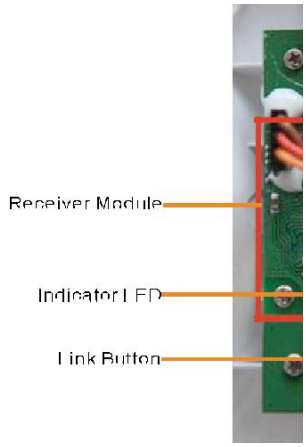
The linking of the transmitter to the receiver of the PHAI necessary you can link the transmitter to the receiver as default receiver type is PPM.

DO NOT use the PHANTOM transmitter (receiver) with th

1. Please remove the housing by referring to th **Housing**.
2. Locate the receiver module according to the follo
3. After powering on the aircraft and the transmitter board is lit solid red, this means the receiver curre
4. Press down the link button for more than two se the button.
5. Push the throttle stick to the lowest position and t the receiver turns off, the link between the tran operation can be done only when the LED indicat

Note:

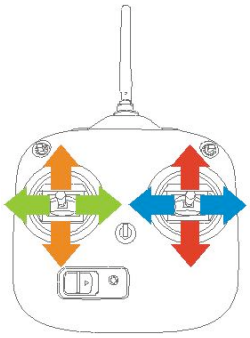
- If the transmitter can't enter the linking mode, pl position.
- You can use your R/C system normally only after



A4 Changing the Control Mode of the Transmitter

You can change the operation mode of the transmitter according to the following procedures if necessary.(The operation mode of Mode1 and Mode2 are shown as below.)

Make sure to carry out the **A5 Transmitter Calibration,** if the Control Mode of the Transmitter is changed.

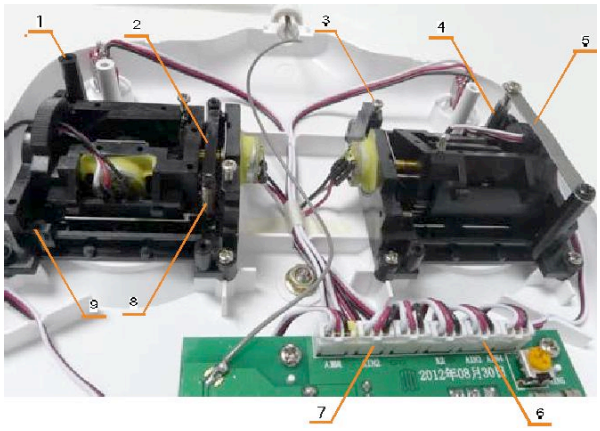


Mode1: Throttle, it cannot hold the central position when released.
Roll, it can return to the central position when released.
Pitch, it can return to the central position when released.
Yaw, it can return to the central position when released.

Model2: Throttle, it cannot hold the central position when released.
Roll, it can return to the central position when released.
Pitch, it can return to the central position when released.
Yaw, it can return to the central position when released.

1. Remove the right Throttle Ratchet plate and the Ratchet Nut. Assemble the Ratchet Nut to the Nut Hole Location and fix the Throttle Ratchet onto the Ratchet Nut and the Screw Hole Location. Adjust the screw height of the Throttle Support to change the tension, so as to give you the required operating feel.
2. Remove the left Centering Unit and the Centering Spring. Assemble them to the corresponding position of the Right part (Close to the middle location of the transmitter). Then adjust the height of the Adjusting Screw, so as to give you the required operating feel. (Note: Be careful not to excessively tension the spring when moving and fixing, to avoid damage.)
3. Exchange the connectors of Channel 2 (AIN2) and Channel 3 (AIN3). (Note: Take care about the connector direction.)

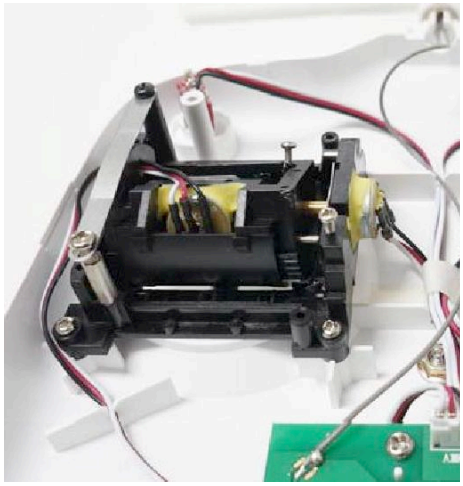
Mode2



NO.	Name
1	Screw Hole Location
2	Centering Unit
3	Adjusting Screw
4	Ratchet Nut
5	Throttle Ratchet
6	3rd Channel
7	2nd Channel
8	Centering Spring
9	Nut Hole Loc tion

The following figure shows the successful change of trans

Mode



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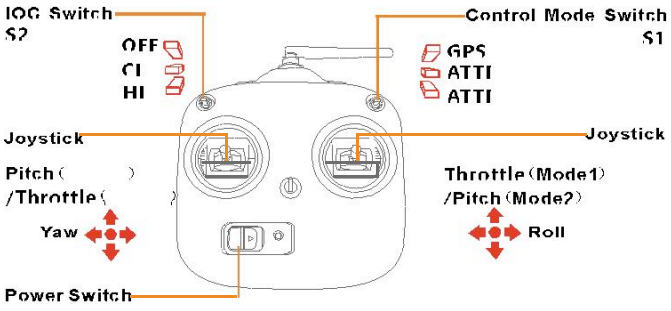
A5 Transmitter Calibration

If the control mode of the transmitter is changed or calibration has not been carried out for a long time, transmitter calibration is necessary.



CL：Course Lock

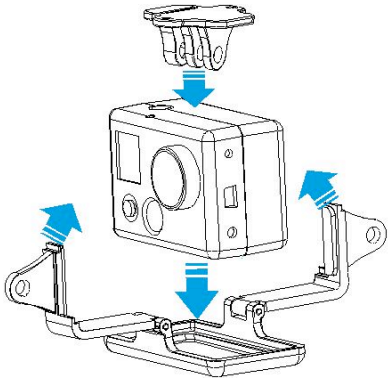
HL：Home Lock

1	Set the switch S2 at the OFF position, and the switch S1 at the GPS position
2	Push the Throttle stick to the top position, and push the Pitch stick to the top position. Keep the Pitch stick at the top position manually since it can return to the central position when released.
3.	Turn on the Power Switch of the transmitter, you should hear the indicator sound of “Di Di Di” from the transmitter repeatedly. Toggle the switch S2 to the CL position, you should hear an indicator sound of “Di” from the transmitter, in this case, the transmitter has entered the calibration mode. (During this period, the Throttle stick and the Pitch stick must be kept at the top position all the time.)
4	Release the Pitch stick and pull the Throttle stick to the central position. Toggle the switch S1 to the ATTI position; you should hear an indicator sound of “Di” from the transmitter. Then move all of the sticks throughout their complete range several times. After this, put the Throttle stick to the bottom position, and toggle the switch S2 to the HL position, you should hear an indicator sound of “Di” from the transmitter, in this case, the transmitter has been calibrated successfully.

A6 Mount Camera and Camera

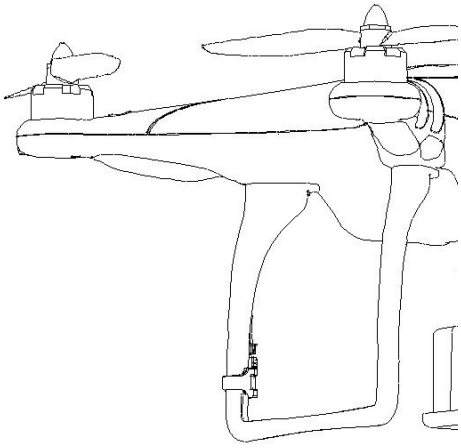
Please mount the Camera and Camera Frame if necessa

（1）Mount the Camera to the Camera Frame



（2）Mount the Camera and Camera Frame to the aircra

Make sure to use the dedicated cross screws of the type battery by passing through the battery compartment and



A7 Intelligent Orientation Control (IOC) Flight

Make sure to open the IOC function in the NAZA-M assistant software before using.

Definition of Forward Direction: Quad -rotor will fly along this direction when you push the elevator stick.

Graphic Description

Nose direction Forward direction Home point Over 10m from Home point

Before You Start

Usually, the forward direction of a flying aircraft is the same as the nose direction. By using IOC, wherever the nose points, the forward direction has nothing to do with nose direction:

- In course lock flying, the forward direction is the same as a recorded nose direction. See the following figures (The red and blue arrows on the transmitter is corresponding to pitch and roll operations):

- In home lock flying, the forward direction is the same as the direction from home point to aircraft. See the following figures (The red and blue arrows on the transmitter is corresponding to pitch and roll operations):

Method of Forward Direction & Home Point Recording

If you use the IOC function, please keep the Forward Direction of Course Lock Flying and the home point of Home Lock Flying in mind at any time. There are two ways to record the forward direction and the home point: Manually and Automatically. You may choose any one record method.

	Course Lock Flight	Home Lock Flight
Automatically	30 seconds after you power on the quad-rotor.	Before takeoff, the current position of the quad-rotor will be saved as home point when you push the throttle stick for the first time after 6 or more GPS satellites have been found.
Manually	Switch the S2 between **OFF** and **CL** position quickly 3 to 5 times to record current nose direction as new forward direction after you power on the quad-rotor for 30s. (**OFF** ->**CL**-> **OFF** is one time.)	When 6 or more GPS satellites are found, you can toggle the S2 switch between **CL** and **HL** position quickly 3 to 5 times to record the current position of the quad-rotor as the new home point. (**CL** -> **HL** -> **CL** is one time.)

IOC Flying Test

Realize an IOC flight by the following procedures.

During the same flight	**STEP1: Record**	**STEP2: ON**
Course Lock		
Switch Setting	Record forward direction	Set switch S1 to **GP** **ATTI** position, S2 to position
Home Lock		
Switch Setting	Record home point	Set switch S1 to **G** position and S2 to position

IOC FLYING NOTES

- LED will blink quickly if recording is successful. the IOC mode only when MC is ready to fly in cou
- Home lock flying requires that 6 or more GPS sat 10m away from the home point.
- Before you do the home lock flight, you have to fl point, and then flip the switch S2 to **HL** position to met. If you have already toggled the switch S2 to around home point, and this is the first time you a flight, then if all the requirements are met, MC wil aircraft flies out of the 10m range around home p
- When flying in Home Lock mode, if any of the foll Home Lock flying and automatically enter Course using the earlier forward direction.
  1. The aircraft fly's within 10m range of the hor
  2. You toggle the control mode switch to the A
  3. The GPS signal becomes bad (The GPS sig
- When the aircraft is flying in home lock mode far toggle the IOC switch many times quickly so as to intentionally knowing.
- We suggest that you should know clearly which fl know the locked forward direction or home point,
- Continuously spinning the aircraft in flight will cau down the spinning, so as to have better flight perf

A8 Maintenance

1. Remove the Housing

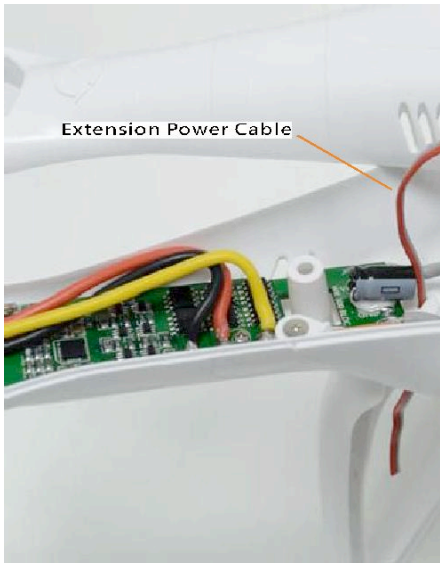
1. Remove all the nuts and propellers by using the assistant wrench.
2. Remove the screws marked in the figure below using a Phillips Screwdriver and a Hexagon Screwdriver, and then remove the housing.

Note:

- Please take good care of the removed parts, for example, screws. Make sure to keep them safe and away from children.
- DO NOT use any thread locker, since the thread locker may corrode the shell of Phantom, may cause fractures.

2. Extension Power

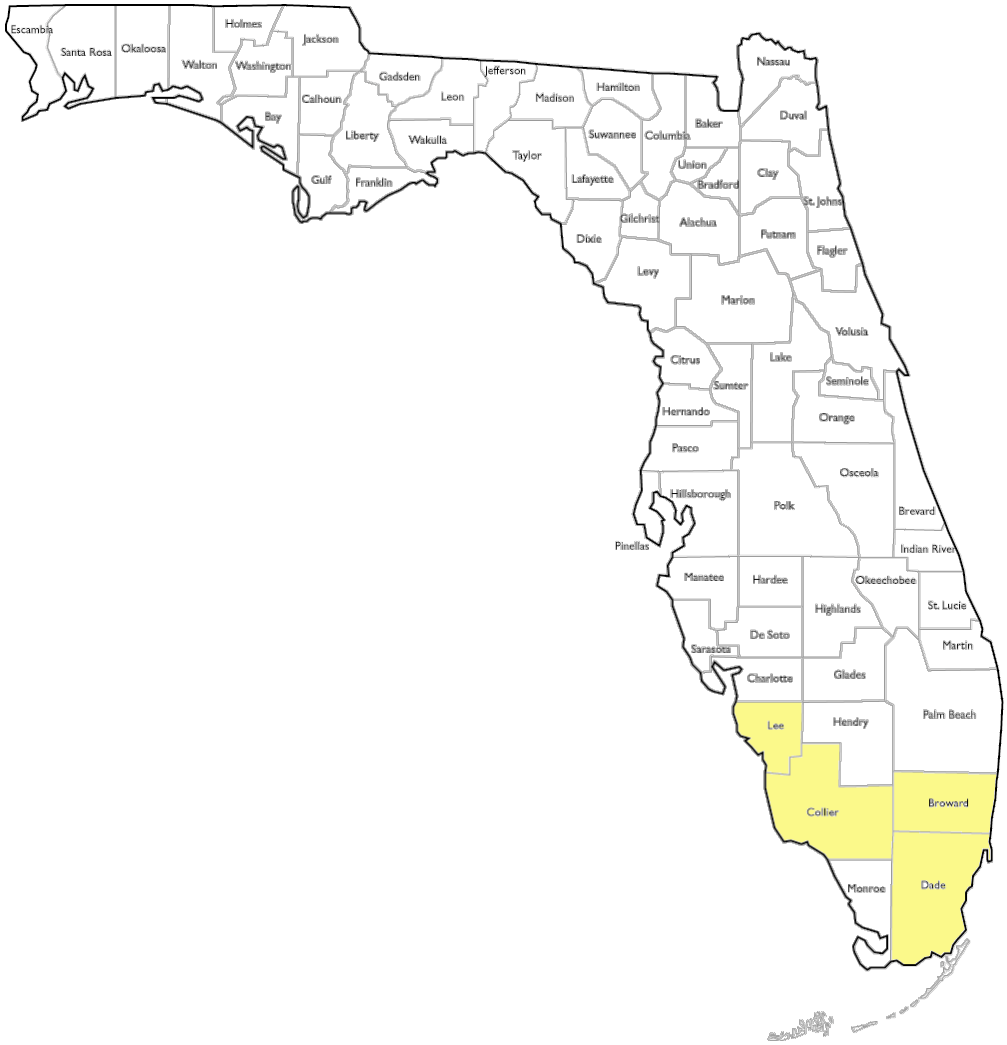
There is an extension power cable in the Phantom for DI
is the same voltage as the power battery. The red cabl
Make sure to keep the red cable and the grey cable sepa



Appendix B

SW and South, FL area Maps

Counties of Collier, Lee, Dade, and Broward


Escambia
Santa Rosa
Okaloosa
Walton
Holmes
Washington
Jackson
Bay
Calhoun
Gadsden
Liberty
Gulf
Franklin
Leon
Wakulla
Jefferson
Madison
Taylor
Hamilton
Suwannee
Lafayette
Columbia
Baker
Union
Bradford
Nassau
Duval
Clay
St. Johns
Putnam
Flagler
Gilchrist
Alachua
Dixie
Levy
Marion
Volusia
Citrus
Lake
Sumter
Seminole
Hernando
Orange
Pasco
Osceola
Hillsborough
Polk
Brevard
Pinellas
Indian River
Manatee
Hardee
Okeechobee
St. Lucie
Highlands
De Soto
Martin
Sarasota
Charlotte
Glades
Lee
Hendry
Palm Beach
Collier
Broward
Monroe
Dade