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

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

July 15, 2015

Exemption No. 12049
Regulatory Docket No. FAA–2015–1503

Mr. Vaden B. Francisco, Jr.
Hutchinson, Cox, Coons, Orr and Sherlock, P.C.
Counsel for Halo Aviation, LLC
400 Woolworth Building
940 Willamette Street
Eugene, OR 97440

Dear Mr. Francisco:

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 Halo Aviation, LLC (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 the Blade 350QX.

The petitioner requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*. In accordance with the statutory criteria

provided in Section 333 of Public Law 112−95 in reference to 49 U.S.C. § 44704, and in consideration of the size, weight, speed, and limited operating area associated with the aircraft and its operation, the Secretary of Transportation has determined that this aircraft meets the conditions of Section 333. Therefore, the FAA finds that the requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*, and any associated noise certification and testing requirements of part 36, is not necessary.

The Basis for Our Decision

You have requested to use a UAS for aerial data collection[1]. The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in your petition. In Grants of Exemption Nos. 11062 to Astraeus Aerial (*see* Docket No. FAA−2014−0352), 11109 to Clayco, Inc. (*see* Docket No. FAA−2014−0507), 11112 to VDOS Global, LLC (*see* Docket No. FAA−2014−0382), and 11213 to Aeryon Labs, Inc. (*see* Docket No. FAA−2014−0642), the FAA found that the enhanced safety achieved using an unmanned aircraft (UA) with the specifications described by the petitioner and carrying no passengers or crew, rather than a manned aircraft of significantly greater proportions, carrying crew in addition to flammable fuel, gives the FAA good cause to find that the UAS operation enabled by this exemption is in the public interest.

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

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

Our Decision

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

[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.

Conditions and Limitations

In this grant of exemption, Halo Aviation, LLC is hereafter referred to as the operator.

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

1. Operations authorized by this grant of exemption are limited to the Blade 350QX 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 July 31, 2017, unless sooner superseded or rescinded.

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

Enclosures

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April 22, 2015

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U.S. Department of Transportation
Docket Operations
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Washington, DC 20590

Re: Exemption Request Under Section 333 of the FAA Reform Act and Part 11 of the Federal Aviation Regulations
Requesting Party: Halo Aviation, LLC
Our Client & File No.: Joiner – 11632/12050

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the "Reform Act") and 14 C.F.R. Part 11, Halo Aviation, LLC ("HALO"), seeks an exemption from Federal Aviation Regulations ("FARs") detailed in this letter for the following described Unmanned Aerial System referred to in this application as the ("HALO System"), which includes an Unmanned Aircraft ("UA") and ground station-based equipment and crew.

COMPANY BACKGROUND:
Halo Aviation, LLC is a limited liability company duly organized and located in the State of Oregon. The primary purpose of the LLC is to provide aeronautical education and aviation resources and training to public and private schools. Staff are highly trained, experienced individuals with years of aviation training and aircraft operation. Halo maintains liability insurance through the Academy of Model Aeronautics.

Founder and Manager, Scot Joiner, is a licensed Airframe and Powerplant Technician and a commercial pilot (license numbers available upon request). He has worked for both in the fixed wing and rotor wing operators as well as heavy machinery. He is well versed in the operation and maintenance of UA and employs a visual observer ("VO").

THE UNMANNED AIRCRAFT (UA):

- A lightweight (24-ounce gross weight with all on-board equipment), battery operated 4-motor rotorcraft in the form of a quadcopter that takes off and lands vertically, capable of carrying the following equipment in flight;
- An on-board flight computer with GPS navigation and location ability that receives signals for flight controls from a ground-based transmitter/controller modified;
- An on-board Go Pro camera capable of capturing imagery in the form of full color, high definition still photos and video;
- An on-board telemetry system operating at 5.8GHz that delivers flight data from the on-board flight computer to the on-board radio transmitter including altitude AGL, horizontal and vertical speed, compass direction of flight and direction back to its launch site;
- A Dx5e DSMX 5 2.4GHz on-board radio transmitter that transmits the flight data from the telemetry system described above.

THE GROUND STATION-BASED PART OF THE SYSTEM:

- A Pilot in Command ("PIC") in operational control of a flight operation from beginning to end and who controls the UA while in the air;
- A 2.4GHz radio transmitter/controller operated by the PIC to control the UA while in flight;
- A radio receiver receiving live video from the on-board camera and computer projects it altogether onto a screen for the PIC to view during flight;
- A VO who is in constant radio communication with the PIC and in visual line of sight ("VLOS") who provides a second pair of eyes to visually track the UA while in flight.
- A ground station that is marked by a fluorescent flag at a height of no more than 8 feet or 94". The ground station shall have visual contact with the UA or VO at all times.

The requested exemption would support an application for a commercial Certificate of Authorization to use the above-described HALO System to support aerial photography and video primarily of real property including but not limited to residential, commercial and agricultural properties.

The UA, powered by batteries, is smaller, lighter and more maneuverable than larger aircraft running on combustible fuel, it operates at altitudes below 400 AGL with no people onboard and will thereby reduce current risk levels and enhances safety and diminishes the likelihood of death or serious bodily injury.

With a small payload and maximum flight time of only 10 minutes, this offers little or no risk to national security.

Low-level oblique photos and video from several angles are far more effective than ground-based imagery for displaying the characteristics of large, complex properties with several buildings and large trees. The applicants in the past have chartered 2-seat full-sized helicopters for this purpose, which have proven more costly than many potential clients have been able to afford. The benefits of reduced cost and improved quality of presentation from the UA will be valuable to and benefit many buyers and sellers of real property.

Additionally, we request that our system be utilized to benefit first responders who might require assistance, including fire fighters, the police, the sheriff, search and rescue, et al., while remaining subject to all limitations cited in this application.

The HALO System will be operated in the field with both a PIC and a VO in accordance with FAA Policy N 8900.227, Section 14 "Operational Requirements for UAS" and with the following Restrictions:

(a) No flight will be made with a UA gross weight exceeding 55 pounds;
(b) All operations must occur in FAA Class G airspace at no more than 400 ft AGL, at an airspeed of no more than 25 knots and no further than 3/4 NM from the PIC;
(c) All operations must utilize a visual observer (VO). The VO and PIC must be able to communicate by voice and radio at all times during a flight operation;
(d) Operations will be restricted to flights over private property with the written permission of the property owner;
(e) The PIC must have accumulated and logged, in a manner consistent with 14 CFR § 61.51(b), a minimum of 100 flight cycles and 25 hours of total time as a UA rotorcraft pilot and at least ten (10) hours logged as a UA pilot with a similar UA type;
(f) All required permits will be obtained from state and local government prior to operation;
(g) The HALO System will not be operated over densely populated areas;
(h) The HALO System will not be operated at air shows;
(i) The HALO System will not be operated over any open-air assembly of people;
(j) The HALO System will not be operated over heavily trafficked roads;
(k) The HALO System will not be operated within 5 NM of an airport or heliport, unless prior written approval is obtained as set forth in the FAA UAS Civil COA request and the tower is notified;
(l) Operations will be restricted to day-only and weather conditions equivalent to VFR;

(m) The PIC will brief the VO and property owner about the operation and risk before the first flight at each new location;
(n) In all applicable situations HALO will obtain written releases from landowner and verbal or written consent from neighboring properties.
(o) No flight may be made without a Pre-Flight Inspection by the PIC before each operation to ascertain that the UA is in a condition safe for flight (see Appendix A and Appendix C).

The PIC and VO will meet the requirements outlined in FAA Policy N 8900.227, Section 16 "Personnel Qualifications." Additionally, the PIC and VO will perform maintenance on the system and will complete a course of maintenance instruction as part of their initial training in accordance with the UA manufacturer recommendations.

We submit that the combination of the UA's light weight, flight performance and ability, fully qualified flight crew and strict operation under the guidelines established in 8900.227, and under all of the Restrictions (a) through (o) listed above, the FAA can have full confidence that the operation will have an equivalent or greater level of safety than manned aircraft performing the same or similar missions.

The name and contact information of the applicant are:

Halo Aviation, LLC
Attn: Scot Joiner
Ph: 541-954-9434
Email: haloaviationllc@yahoo.com

The regulations from which the exemption is requested are listed below. Beside each regulation number is the page of the attached Addendum upon which each may be found together with our proposed equivalent level of safety for each regulation:

We are prepared to modify or amend any part of this request to satisfy the need for an equivalent level of safety. Please contact us at any time if you require additional information or clarification. We formally request a decision within 120 days as required under Section 333. We look forward to working with your office.

Very truly yours,

HUTCHINSON, COX, COONS,
ORR & SHERLOCK, P.C.

Vaden B. Francisco, Jr.

VBF/cc
Attachments:
- Addendum containing Exemption Requests and Equivalent Level of Safety
- Appendix A – Instruction/Flight Manual
- Appendix B – Portions of GoPro Operator's Manual
- Appendix C – Preflight Inspection Checklist

ADDENDUM

ADDENDUM

EXEMPTION REQUESTS AND EQUIVALENT LEVEL OF SAFETY

Halo Aviation, LLC, (petitioner) requests an exemption from the following regulations as well as any additional regulations that may technically apply to the operation of the HALO System:

14 CFR Part 21, Subpart H: Airworthiness Certificates.
This part establishes the procedures for the issuance of an airworthiness certificate. The FAA has indicated that relief is not necessary under 14 CFR Part 21 as statutory criteria established in Section 333 of P.L. 112-95 in reference to 49 USC Section 44704, that the size, weight, speed and limited operating area with the aircraft and its operation, the Secretary of Transportation has determined that this type of aircraft meets the conditions of Section 333.

However, the petitioner wishes to be thorough and requests that the FAA be reminded that the aircraft will not carry persons or property, will not carry fuel, and will only fly under strict operational requirements. Combined with the UA's light-weight, being constructed primarily of carbon fiber and plastic, we confirm that the UA will be at least as safe, if not safer, than a conventionally certificated aircraft performing the same mission.

The parts for the UA will be obtained from the manufacturer or licensed representative of the manufacturer and installed in accordance with the manufacturer's instructions.

14 CFR 91.203(a) & (b) Civil aircraft: Certifications required.
The regulation provides that an airworthiness certificate, with the registration number assigned to the aircraft and a registration certificate must be aboard the aircraft. Additionally, subparagraph (b) provides that the airworthiness certificate be "displayed at the cabin or cockpit entrance so that it is legible to passengers or crew."

At a maximum gross weight of 5.3 pounds, the UA is too small to carry documentation, does not have an entrance, and is not capable of carrying passengers or crew. To obtain an equivalent level of safety and meet the intent of 91.203, we propose that documents deemed appropriate for this aircraft by the FAA will be co-located with the crew at the ground control station and available for inspection upon request. In order to identify the aircraft, we propose that the information found on airworthiness and registration certificates be permanently affixed to the aircraft via placard containing the following information:

Property of: HALO AVIATION, LLC.
MFG: Horizon Hobby, Inc.
4105 Fieldstone Road
Champaign, Illinois 61822
Model: BLADE 350QX

If found please contact: (541) 954-9434

14 CFR 45.29 Size of marks.
These regulations provide that each aircraft must display "N" and the aircraft's registration number in letters at least 3 inches high.

We propose to achieve an equivalent level of safety by including a placard on the top of the aircraft, as shown above, where the PIC, VO and others in the vicinity of the aircraft while it is preparing for launch will be able to see the designation. Additionally, we feel that the permanent placard discussed in the previous paragraph will provide the aircraft's registration information at the ground station. Finally, we will display at the ground station a high contrast flag or banner that contains the words "Unmanned Aircraft Ground Station" in letters 3 inches high or greater. Since the aircraft will operate within 3/4 NM of the ground station, the banner should be visible to anyone that observes the aircraft and chooses to investigate its point of origin.

14 CFR 91.7 Civil aircraft airworthiness.
This regulation provides that (a) no person may operate a civil aircraft unless it is in an airworthy condition. And (b) the pilot in command of a civil aircraft is responsible for determining whether that aircraft is in condition for safe flight. The pilot in command shall discontinue flight when unairworthy mechanical, electrical, or structural conditions occur.

Petitioner understands that a UA is not issued an airworthiness certificate and understands that the FAA requires the petitioner to comply with the UA operating documents prior to every flight to determine if the UA is in an airworthy condition.

In accordance with Appendix () the PIC shall perform an airworthiness inspection prior to every flight and shall terminate or discontinue a flight as soon as safely practicable upon the discovery of an unairworthy condition which shall include mechanical, electrical or structural failures.

14 CFR 91.9 Civil aircraft flight manual, marking, and placard requirements.
This regulation provides that no person may operate an aircraft unless a current, approved flight manual is in the aircraft. We assume that the intent of this requirement is to ensure that flight manual information is available to the aircrew while operating the aircraft. We request an exemption to this requirement since the aircraft is not only too small to carry documentation, the documentation would not be available to the crew during flight operations.

To obtain an equivalent level of safety and meet the intent of 91.9, we propose that a current, approved UA Flight Manual (Appendix A) must be available to the crew at the ground station anytime the aircraft is in, or preparing for, flight.

14 CFR 61.113 Private pilot privileges and limitations: Pilot in Command and 61.133 Commercial pilot privileges and limitations.
The regulation provides that no person that holds a private pilot certificate may act as pilot in command of an aircraft for compensation or hire. Subparagraph (b) allows a private pilot to act as pilot in command of an aircraft in connection with any business or employment if: (1) The flight is only incidental to that business or employment; and (2) The aircraft does not carry passengers or property for compensation or hire.

Our proposed operations require that the PIC must either:

1. Hold a Commercial Pilot Certificate issued by the FAA, and have logged 25 hours of flight experience in this type of UA;
2. Meet the requirements of 8900.227 paragraph 16(c)(2)(c) "Operations without a pilot certificate" in which the PIC is required to complete "FAA private pilot ground instruction" and pass "the FAA Private Pilot written examination." Since there are currently no means available for the pilot of a UAS to gain the experience in an equivalent category and class in order to apply for a commercial pilot's license, we propose to generate an equivalent level of safety by requiring our pilots to complete, at a minimum, FAA private

pilot ground instruction and pass the FAA Private Pilot written examination in addition to completing and demonstrating proficiency of operation according to petitioner's guidelines and instructions set by the manufacturer. Since the aircraft cannot carry passengers or property, we feel we meet the intent of 61.113 Subparagraph (b) even though the intent of this application is to conduct a business.

14 CFR 91.109 Flight Instruction; Simulated instrument flight and certain flight tests.
The regulation states that "No person may operate a civil aircraft that is being used for flight instruction unless that aircraft has fully functioning dual controls."

The HALO System ground-based control station consists of a small hand-held radio transmitter and while it does not offer a second set of "controls", both the student and instructor can, and will, operate the single set of controls simultaneously. With both student and instructor having "hands-on" the controls during flight, we feel that this technique meets the intent 91.109 and provides an equivalent level of safety.

14 CFR 91.119 Minimum safe altitudes General.
The regulation states that over sparsely populated areas the aircraft cannot be operated closer than 500 feet to any person, vessel, vehicle, or structure. Since the aircraft will be operating at a maximum of 400 feet AGL, we cannot comply with this requirement.

In order to provide an equivalent level of safety we will only fly over private property with a size of at least two acres with the permission of the owner of the property flown over. The aircraft will not be operated over congested areas or over any open air assembly of persons. The property owner will be briefed on the expected route of flight and the associated risks to persons and property on the ground. The property owner will have read and reviewed a consent and release form provided by the petitioner. The aircraft will be operated at a low altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface. Therefore we maintain that due to the small size of the UA, the hazard to persons, vehicles and structures is minimal compared to manned aircraft, which should be considered in granting the exemption.

14 CFR 91.121 Altimeter settings.
The regulation requires that aircraft shall maintain cruising altitudes by reference to an altimeter setting available within 100 NM of the aircraft.

The UA will always fly below 400 feet AGL and will not need to maintain cruising altitudes in order to prevent conflict with other aircraft. An Above Ground Level altimeter measurement above the takeoff point is transmitted via radio from the UA on-board computer to the display screen held by the PIC, providing a constantly updated AGL readout.

14 CFR 91.151 Fuel requirements for flight in VFR conditions.
The regulation provides that no person may begin a flight in an airplane under day-VFR conditions unless there is enough fuel to fly to the first point of intended landing and to fly after that for at least 30 minutes.

We feel the intention of this paragraph is to provide an energy reserve as a safety buffer for delays to landing. The UA is battery operated and the maximum duration of flight from a single battery charge is 10 minutes with a 20% reserve. Since the aircraft will never fly more than 3/4 NM from the point of intended landing, a full battery charge at launch will ensure that we meet

the reserve energy requirement of this paragraph. We request an exemption to the word "fuel" and ask for an equivalent interpretation with the word "energy".

14 CFR Subpart E (91.401 – 91.417) – Maintenance, Preventive Maintenance, Alterations.
The regulation provides that the operator is primarily responsible for maintaining the aircraft in an airworthy condition, including compliance with part 39 and 43. Paragraphs 91.407 and 91.409 require that the aircraft be "approved for return to service by a person authorized under 43.7" after maintenance and inspection.

It is our intention that the PIC perform maintenance and inspection of the aircraft and "be authorized to approve the aircraft for return to service." As provided in the Pre-Flight Checklist in Appendix A, the PIC will ensure that the aircraft is in an airworthy condition prior to every flight and in addition conduct detailed inspections after every two hours of flight. Maintenance performed by the PIC is limited to repairing small cracks, replacing a propeller, checking electrical connections and updating software and firmware for the on-board computer. All other maintenance will be performed by the manufacturer or their designated repair facility. The PIC will document work performed in accordance with 91.417. We feel that due to the size, construction, and simplicity of the aircraft, the PIC can ensure an equivalent level of safety.

8900.227 Paragraph 16(c)(4) PIC Medical, and Paragraph 16(e)(1) Observer Medical.
This policy provides that both the PIC and VO must have a valid FAA second-class medical certificate issued under part 67 in order to perform as a pilot or observer.

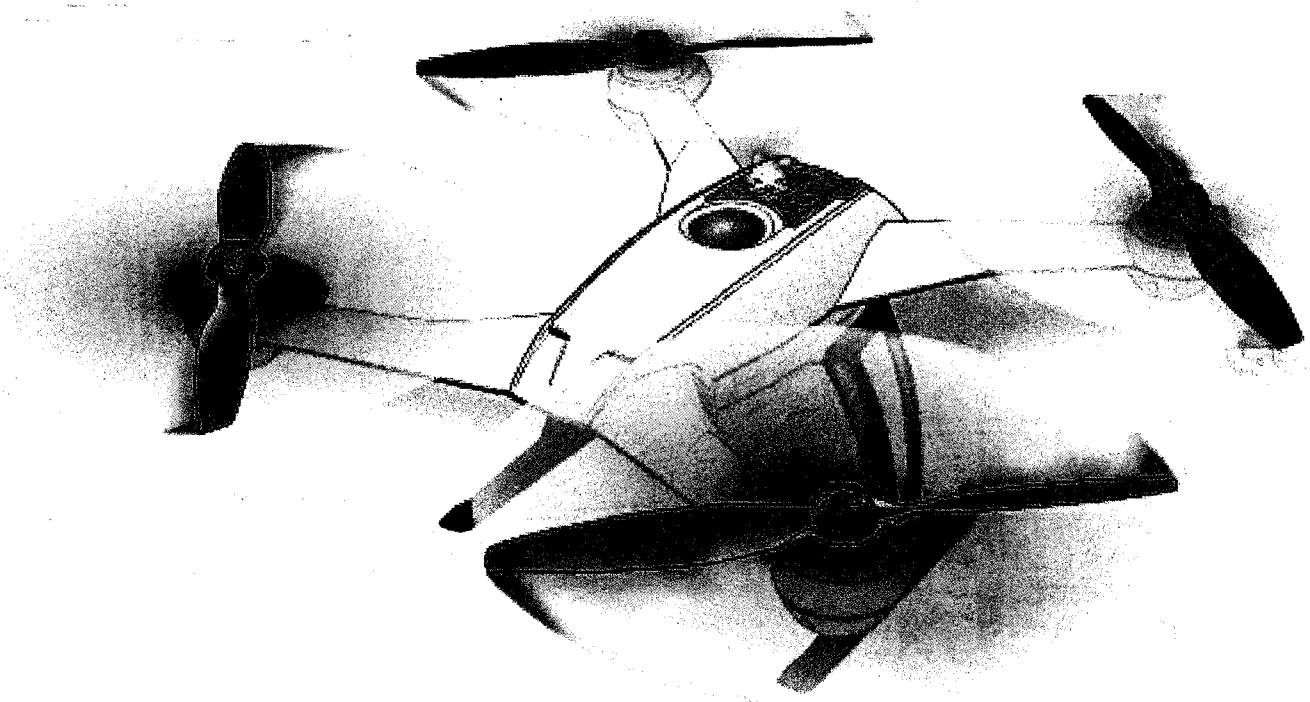
The UA maximum gross weight is 24 ounces, it is constructed of carbon fiber and plastic and the PIC is not on board. Both the PIC and the VO are required to be in VLOS. Given the unlikely event that both the PIC and VO become medically incapacitated while the aircraft is in flight, the UA will return autonomously to the site of launching and land without crew intervention. Therefore, requiring the PIC and VO to meet the same medical requirements as a commercial pilot carrying passengers in a large aircraft is an unnecessary burden.

We propose that the minimum medical requirements for the PIC and VO be vision corrected to 20/20 and a valid, state issued driver's license. The 20/20 vision requirement will ensure that the PIC and VO can see and avoid air traffic; a licensed driver is medically qualified to operate a much larger vehicle.

APPENDIX A

BLADE 350 QX

#1 BY DESIGN



Instruction Manual

SAFE™

RTF

BNF

NOTICE

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, Inc. For up-to-date product literature, visit horizonhobby.com and click on the support tab for this product.

Meaning of Special Language

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product:
NOTICE: Procedures, which if not properly followed, create a possibility of physical property damage AND a little or no possibility of injury.
CAUTION: Procedures, which if not properly followed, create the probability of physical property damage AND a possibility of serious injury.
WARNING: Procedures, which if not properly followed, create the probability of property damage, collateral damage, and serious injury OR create a high probability of superficial injury.

WARNING: Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury.

This is a sophisticated hobby product. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children without direct adult supervision. Do not use with incompatible components or alter this product in any way outside of the instructions provided by Horizon Hobby, Inc. This manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.

Age Recommendation: Not for children under 14 years. This is not a toy.

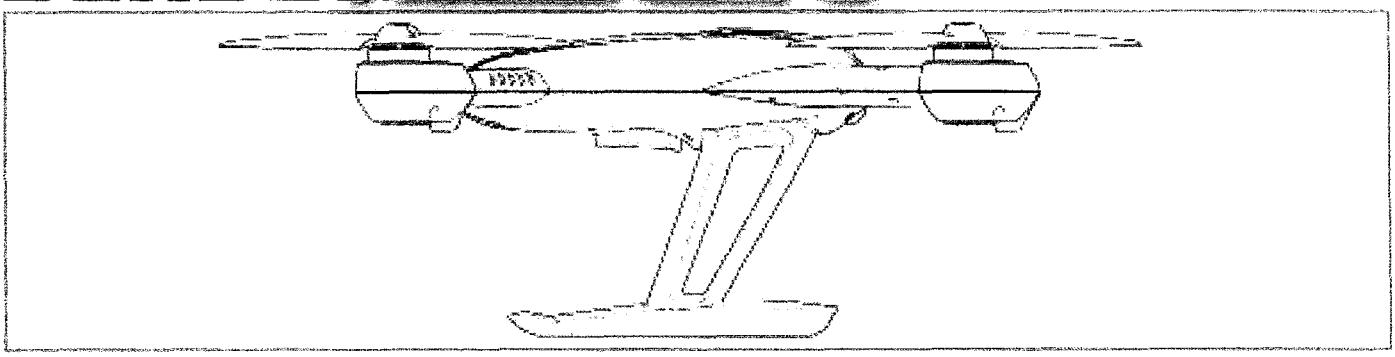
General Safety Precautions and Warnings

- Always keep a safe distance in all directions around your model to avoid collisions or injury. This model is controlled by a radio signal subject to interference from many sources outside your control. Interference can cause momentary loss of control.
- Always operate your model in open spaces away from full-size vehicles, traffic and people.
- Always carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable battery packs, etc.).
- Always keep all chemicals, small parts and anything electrical out of the reach of children.
- Always avoid water exposure to all equipment not specifically designed and protected for this purpose. Moisture causes damage to electronics.
- Never place any portion of the model in your mouth as it could cause serious injury or even death.
- Never operate your model with low transmitter batteries.
- Always keep aircraft in sight and under control.
- Always move the throttle fully down at rotor strike.
- Always use fully charged batteries.
- Always keep transmitter powered on while aircraft is powered.
- Always remove batteries before disassembly
- Always keep moving parts clean.
- Always keep parts dry.
- Always let parts cool after use before touching.
- Always remove batteries after use.
- Never operate aircraft with damaged wiring.
- Never touch moving parts.

CAUTION: The ESCs for the 350 QX are not compatible with any other product, and the 350 QX is not compatible with any other ESCs. Use of any other ESCs on the 350 QX will cause a crash, which may result in property damage and/or personal injury.

WARNING AGAINST COUNTERFEIT PRODUCTS: If you ever need to replace a Spektrum component found in a Horizon Hobby product, always purchase from Horizon Hobby, Inc. or a Horizon Hobby authorized dealer to ensure authentic high-quality Spektrum product. Horizon Hobby, Inc. disclaims all support and warranty with regards, but not limited to, compatibility and performance of counterfeit products or products claiming compatibility with DSM or Spektrum.

BLADE 350 QX



Thank you for purchasing the Blade 350 QX quadcopter. You are in for an exciting experience with this exceptional flying machine. With GPS, pressure and compass sensors added to the SAFE™ (Sensor Assisted Flight Envelope) system, the 350 QX has some incredible features. Position hold, altitude command and self-leveling provide you with a smooth and manageable flight performance. With the addition of the SAFE Circle™, Stick Relativity and Return Home functions, the 350 QX makes it more practical and easier to fly for new pilots without RC experience. The Blade 350 QX uses LED codes to communicate flight modes, GPS functions and errors for which you will need the manual. To assure you have a safe and fun experience with your new quadcopter, it is critical that you take the time to read and understand this manual and all the features this aircraft contains.

Table of Contents

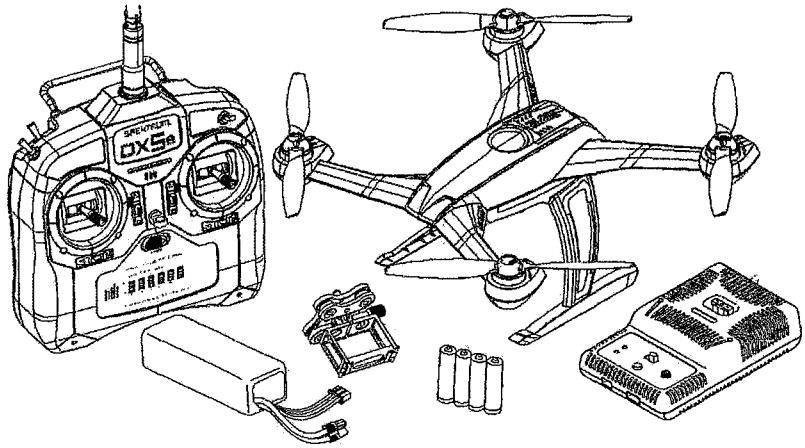
Blade 350 QX Specifications			
Length	18.30 in (465mm)	**Main Rotor Diameter**	22.80 in (580mm)
Height	5.43 in (138mm)	**Flying Weight**	24 oz (680 g)

	Component	RTF	BNF
Airframe	Blade 350 QX Quadcopter	included	included
Motors	4x Brushless Outrunner Motor, 1100Kv	installed	installed
ESCs	4x 10-Amp Brushless ESC	installed	installed
Battery	3S 11.1V 2200mAh 30C Li-Po	included	included
Charger	2–3S Li-Po Balancing DC Charger, 0.5–3A	included	included
Transmitter	DSM2®/DSMX® compatible transmitter	included	required

To register your product online, visit www.bladehelis.com

Box Contents

- Blade 350 QX
- Camera Mount
- 3S 11.1V 2200mAh Li-Po Battery Pack
- 2–3S DC Li-Po Balancing Charger
- DX5e DSMX 5-Channel Transmitter (RTF only)
- 4 AA Batteries (RTF only)



Charging Warnings

The Battery Charger (EFLC3010) included with your quadcopter has been designed to safely charge the Li-Po battery.

⚠ **CAUTION:** All instructions and warnings must be followed exactly. Mishandling of Li-Po batteries can result in a fire, personal injury and/or property damage.

- By handling, charging or using the included Li-Po battery, you assume all risks associated with lithium batteries.
- If at any time the battery begins to balloon or swell, discontinue use immediately. If charging or discharging, discontinue and disconnect. Continuing to use, charge or discharge a battery that is ballooning or swelling can result in fire.
- Always store the battery at room temperature in a dry area for best results.
- Always transport or temporarily store the battery in a temperature range of 40–120° F (5–49° C). Do not store battery or model in a car or direct sunlight. If stored in a hot car, the battery can be damaged or even catch fire.
- Always charge batteries away from flammable materials.
- Always inspect the battery before charging
- Always disconnect the battery after charging, and let the charger cool between charges.
- Always constantly monitor the temperature of the battery pack while charging.
- ONLY USE A CHARGER SPECIFICALLY DESIGNED TO CHARGE LI-PO BATTERIES. Failure to charge the battery with a compatible charger may cause a fire resulting in personal injury and/or property damage.
- Never discharge Li-Po cells to below 3V under load.
- Never cover warning labels with hook and loop strips.
- Never leave charging batteries unattended.
- Never charge batteries outside recommended levels.
- Never charge damaged batteries.
- Never attempt to dismantle or alter the charger.
- Never allow minors to charge battery packs.
- Never charge batteries in extremely hot or cold places (recommended between 40–120° F) or (5–49° C) or place in direct sunlight.

Low Voltage Cutoff (LVC)

Low voltage cutoff (LVC) protects the Li-Po battery from over-discharge in flight and activates when the battery reaches a preset value. When the battery is discharged to the cutoff point, the aircraft will display rapidly flashing red, green and blue LEDs to warn you it's time to land. When you see this LED code, land immediately to prevent over-discharge and damage to the battery.

When the LVC is activated, you have approximately 2 minutes until the battery is depleted and can no longer maintain a hover. Repeated flying to LVC will damage the battery.

NOTICE: Crash damage and battery damage are not covered under warranty.

IMPORTANT: Always disconnect and remove the Li-Po battery from the aircraft after each flight. Charge your Li-Po battery to about half capacity before storage. During storage, make sure the battery charge does not fall below 3V per cell. A connected battery will result in trickle discharge.

Charging the Flight Battery

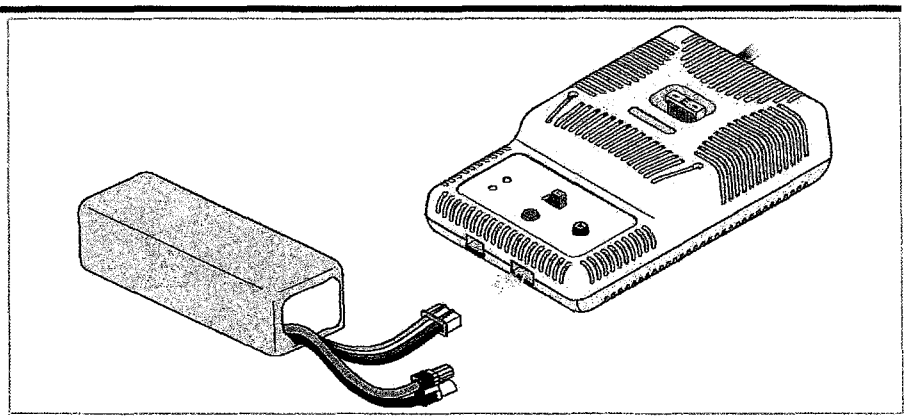
E-flite® 2–3S Li-Po Balancing Charger Specifications

- Input power: 10.5–15.0V DC, 3-amp
- Charges 2- to 3-cell Li-Po packs with minimum capacity of 500mAh

E-flite 3S 11.1V 2200mAh Li-Po Battery Pack

The E-flite® 3S Li-Po battery pack features a balancing lead that allows you to safely charge your battery pack when used with the included E-flite Li-Po balancing charger.

⚠ **CAUTION:** The balance connector must be inserted into the correct port of your charger prior to charging.



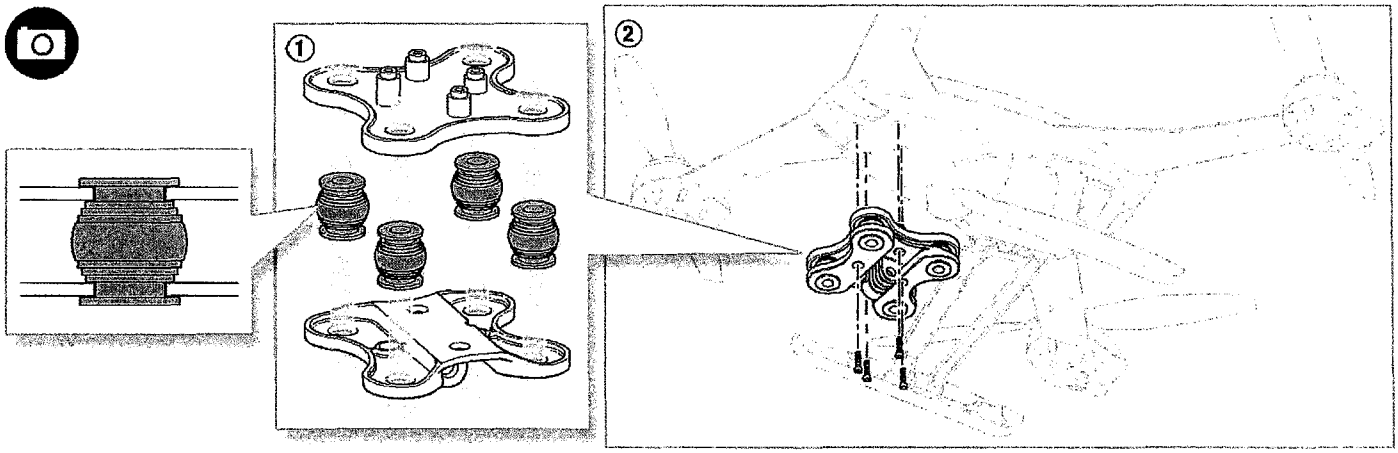
The Battery Charging Process
1. Charge only batteries that are cool to the touch and are not damaged. Look at the battery to make sure it is not damaged e.g., swollen, bent, broken or punctured.
2. Attach the input cord of the charger to an appropriate power supply, such as a 12V battery or 12V DC power supply.
3. When the Li-Po charger has been correctly powered up, there will be an approximate 3-second delay, then an audible "beep" and the green (ready) LED will flash.
4. Turn the control on the Amps selector so the arrow points to the charging rate required for the battery (the 2200mAh Li-Po battery will charge at 2.0 amps). DO NOT change the charge rate once the battery begins charging.
5. Move the cell selector switch to 3-cell for your battery.
6. Connect the balancing lead of the battery to the 3-cell (4 pin) charger port and press the Start button to begin battery charging.
7. The green and red LEDs may flash during the charging process when the charger is balancing cells. Balancing prolongs the life of the battery.
8. When the battery is fully charged, a beep will sound for about 3 seconds and the green LED will shine continuously. Attempting to charge an over-discharged battery will cause the charger to repeatedly flash and beep, indicating an error has occurred.
9. Always unplug the battery from the charger immediately upon completion of charging.

⚠ **CAUTION:** Overcharging a battery can cause a fire.

NOTICE: If using a battery other than the included Li-Po battery, refer to your battery manufacturer's instructions for charging.

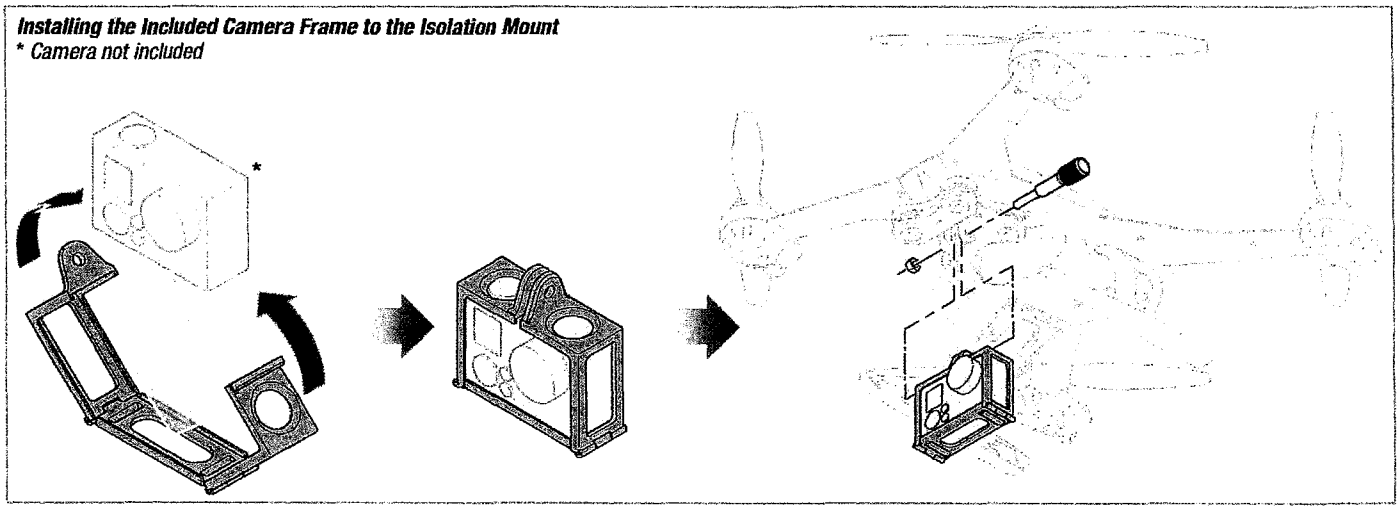
Mounting a Camera

IMPORTANT: Consult local laws and ordinances before installing and operating any type of photograph-capable or video recording device in this product.



Installing the Included Camera Frame to the Isolation Mount

** Camera not included*



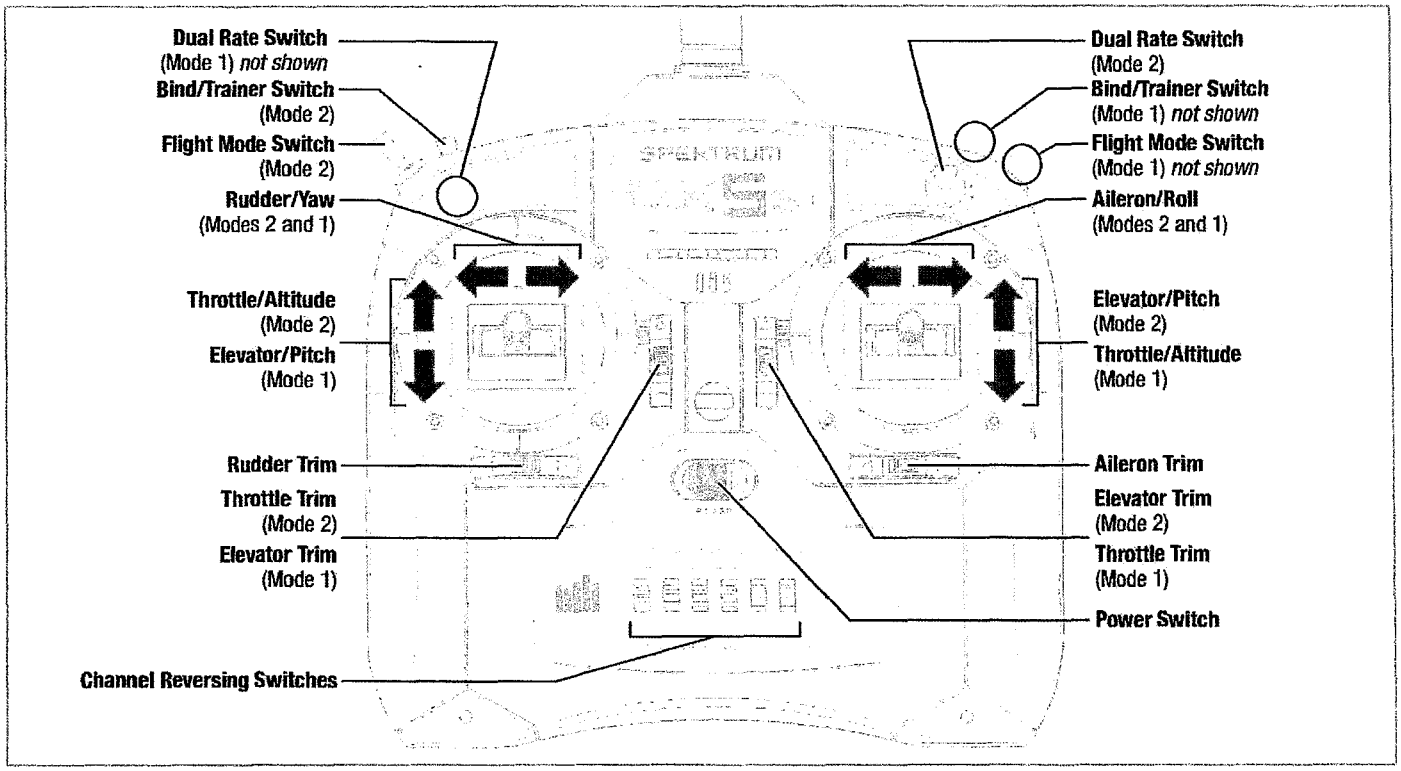
Transmitter Setup (BNF)

CAUTION: When using a Futaba transmitter with a Spektrum DSM module, you must reverse the throttle channel and rebind. Refer to your Spektrum module manual for binding and failsafe instructions. Refer to your Futaba transmitter manual for instructions on reversing the throttle channel.

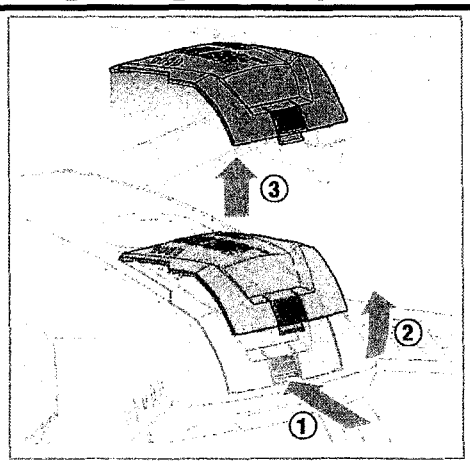
Transmitter	Model Type	Reverse Setup	Throttle Cut Setup	Mode Setup	Switch Positions	Throttle Cut	Return Home	Dual Rate Switch	High Rate	Low Rate
DX4e (New)* w/3-position switch	N/A	N/A	N/A	N/A	Position 0 = **SMART Mode** Position 1 = **Stability Mode** Position 2 = **Agility Mode**	Lower throttle trim until motors stop turning	Press and Hold TRAINER/BIND Release to EXIT	Rate	100% fixed	70% fixed
DX5e (New)* w/3-position switch	N/A	N/A	N/A	N/A	Position 0 = **SMART Mode** Position 1 = **Stability Mode** Position 2 = **Agility Mode**	Lower throttle trim until motors stop turning	Press and Hold TRAINER/BIND Release to EXIT	Rate	100% fixed	70% fixed
DX6i	Acro	THRO-N ELEV-N GEAR-R AILE-N RUDD-N FLAP-N	ACT	Travel Adj: GEAR POS (0) GEAR: ↑100%; GEAR/F MODE POS (1) GEAR: ↓40% FLAPS: Norm ←↑100; LAND ↓100 MIX 1: ACT; GEAR → GEAR ACT RATE D 0%; U + 100% SW MIX TRIM INH SUB TRIM THRO ↑ 15-20%	GEAR 0; Mix 0 = **SMART Mode** GEAR 1; Mix 0 = **Stability Mode** GEAR 1; Mix 1 = **Agility Mode**	Press throttle cut	FLAP Position 0 = OFF FLAP Position 2 = Return Home	ELEV-AIL D/R	100%	70%
DX7/7SE	Acro	FLAP-R (6) Others-N	N/A	Travel Adj: GEAR (0)↑100%; GEAR (1) ↓40% MIX 1: FLAP → Gear OFF/ON RATE → -50% 0% SW: MIX OFFSET: 0	GEAR (0); Mix (0) = **SMART Mode** GEAR (1); Mix (0) = **Stability Mode** GEAR (1); Mix (1) = **Agility Mode**	Lower throttle trim until motors stop turning	FLAP Pos 0 = OFF FLAP Pos 1 = Return Home	ELEV-AIL D/R	100%	70%
DX7S	Acro	AUX1-R Others-N	Set To: Trainer	Switch Select: Move Gear to F MODE (F MODE:GEAR) Leave FLAPS as AUX1 Set All Others to INH MIX 1: GER > GER RATE: 0% -100% OFFSET: 0%; TRIM: INH; SW: Mix0	F MODE (0) = **SMART Mode** F MODE (1) = **Stability Mode** F MODE (1); HOLD (1) = **Agility Mode**	Press Trainer	FLAP Pos 0 = OFF FLAP Pos 2 = Return Home	ELEV-AIL D/R	100%	70%
DX8	Acro	AUX1-R Others-N	Set To: Trainer	Switch Select: F-Mode to Gear; Flap to Aux 1 All Others to INH	F MODE (0) = **SMART Mode** F MODE (1) = **Stability Mode** F MODE (2) = **Agility Mode**	Press Trainer/ Bind	FLAP Pos 0 = OFF FLAP Pos 2 = Return Home	ELEV-AIL D/R	100%	70%
DX9/DX18	Acro	AUX1-R Others-N	Set To: I (BIND)	Channel Assign: NEXT 1-4: N/A 5 Gear: B 6 AUX1: D 7 AUX2: I 8-10: INH	B (0) = **SMART Mode** B (1) = **Stability Mode** B (2) = **Agility Mode**	Press I (BIND)	D (FLAP) Pos 0 = OFF D (FLAP) Pos 2 = Return Home	ELEV-AIL D/R	100%	70%

* Old versions of the DX4e and DX5e (with 2-position channel 5 switches) are **not** recommended for the 350 QX. Only **Smart Mode** and **Agility Mode** will be available with GPS On.

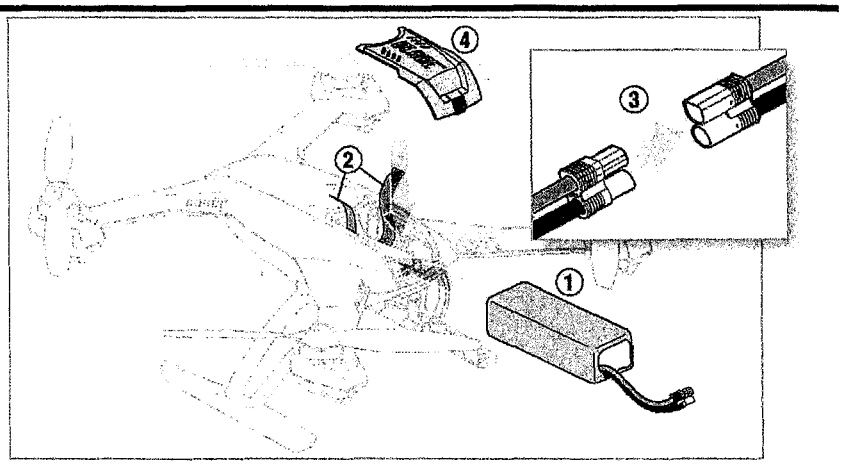
Transmitter Control Layout (RTF)



Connecting the Flight Battery



Remove the battery cover



Install the battery

Binding

- If you purchased the ready-to-fly (RTF) model, the transmitter is bound to the model at the factory. If for any reason the model needs to be re-bound, follow the directions for the Bind-N-Fly® (BNF) version below.

BNF BIND-N-FLY®

To bind or re-bind your 350 QX to your chosen DSM2/DSMX transmitter, please follow the directions below along with the binding instructions included with your transmitter:

The Binding Process
1. With the transmitter and quadcopter powered off, connect the battery to the 350 QX.
2. With the 350 QX on a level surface, turn on the power switch and allow the quadcopter to initialize.
3. Wait until the blue LED on the quadcopter flashes rapidly, signaling the quadcopter is initialized and ready to bind.
4. Ensure throttle is in the low position and throttle trim is at neutral.
5. Hold the control sticks in the desired bind position (see illustrations) and press/pull the bind button/switch, then power on the transmitter.
6. Refer to the Flying LED Codes table to ensure the aircraft is bound correctly.

IMPORTANT: Do not attempt to bind with more than one bind code. Binding with more than one bind code will only allow the aircraft to bind normally.

Unless binding with a bind code, the elevator and aileron inputs (including trim) must be neutral during binding. If you are attempting a normal bind with any input other than neutral, the aircraft will emit a constant, rapid beeping sound.

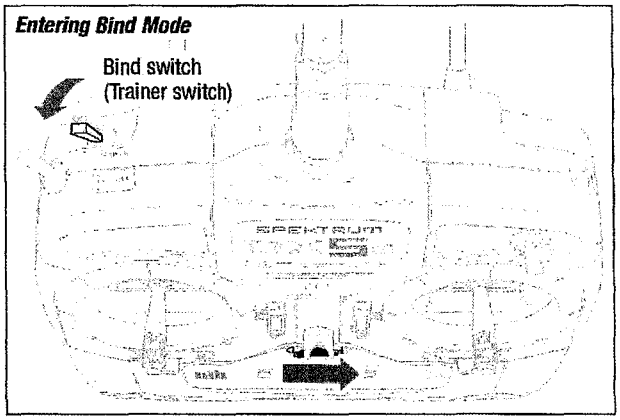
If your 350 QX emits a constant beeping sound after binding (Smart or Agility Mode only):

1. Ensure all trims are neutral.
2. Slowly move the elevator stick back and forth (close to center) and listen for the beeping to stop or hesitate. Take note of the direction you are moving the stick when the change of tone happens.
3. If the tone never changes with elevator movement, slowly move the aileron stick back and forth (close to center) and listen for the beeping to stop or hesitate. Take note of the direction you are moving the stick when the change of tone happens.
4. Input trim in the direction that caused the change in tone until the beeping stops.

In the event you cannot find an input that stops the tones:

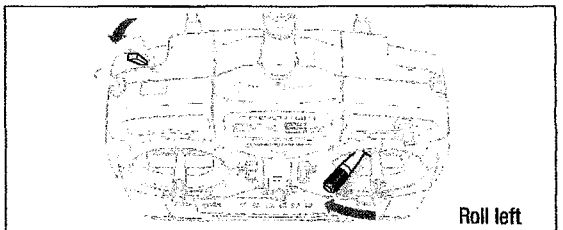
1. Apply 1 click of elevator trim in either direction and then slowly move the aileron stick close to center.
2. Continue to add 1 click at a time of elevator trim, up to 5 trim steps off center up or down, and move the aileron stick until you find the point that makes the tones stop.
3. Add aileron trim in the direction you moved the stick to make the tones stop.

Entering Bind Mode

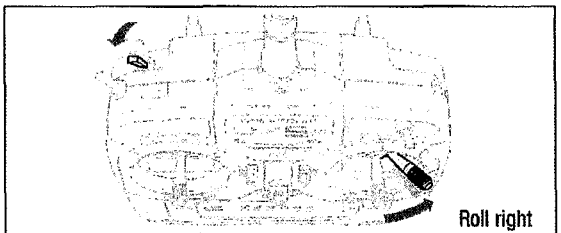


Normal Bind

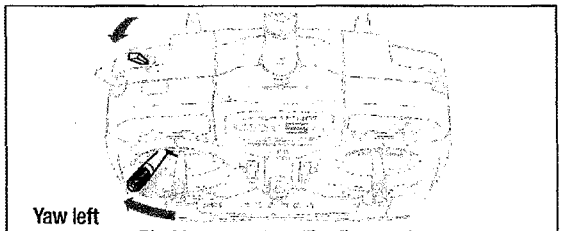
Transmitter Bind Codes *Mode 2 shown*



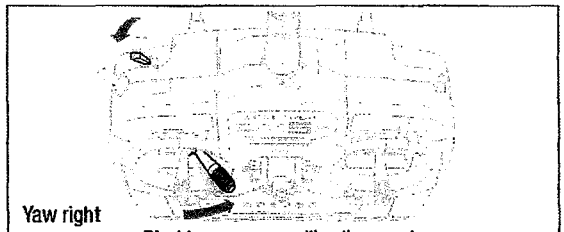
Bind with GPS enabled



Bind with GPS disabled

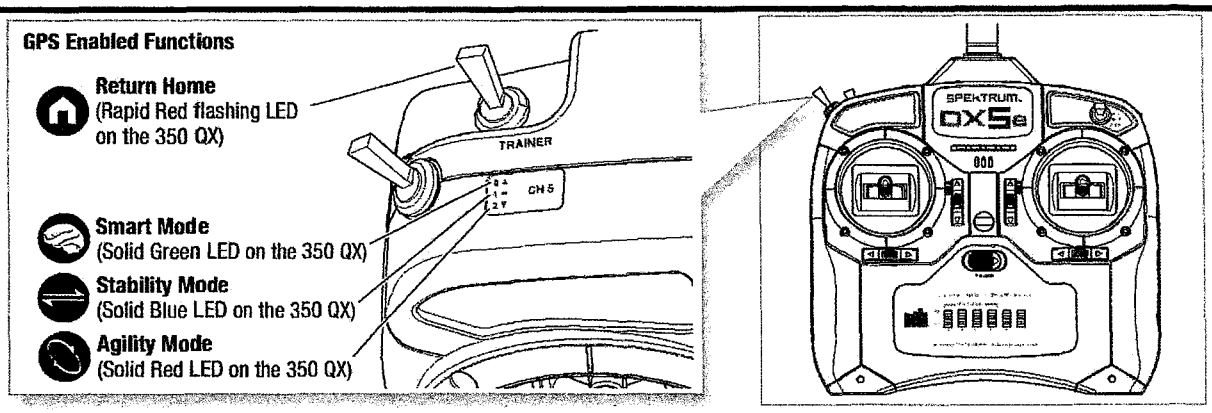


Bind in compass calibration mode

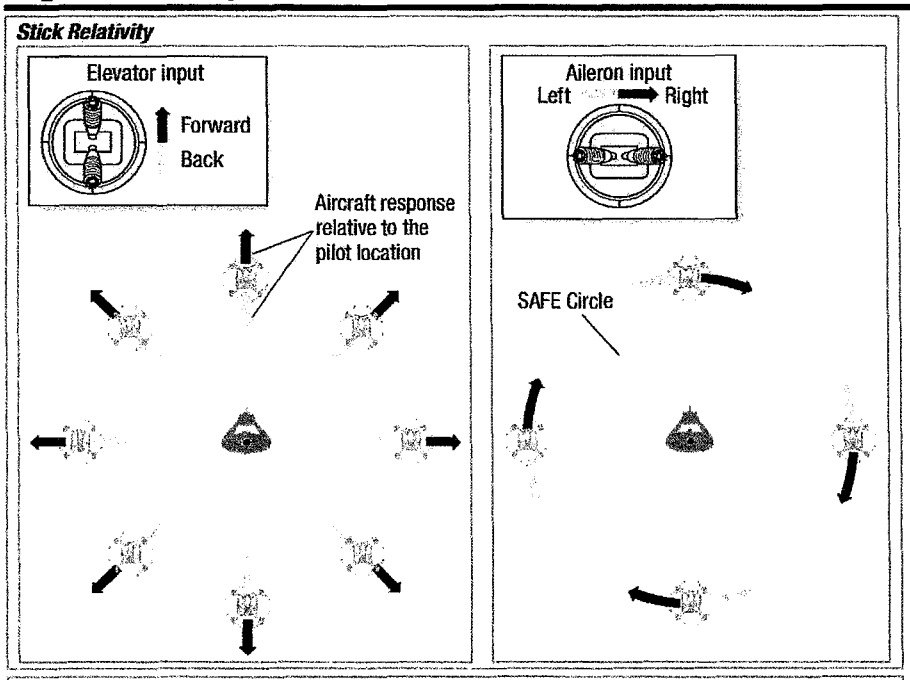


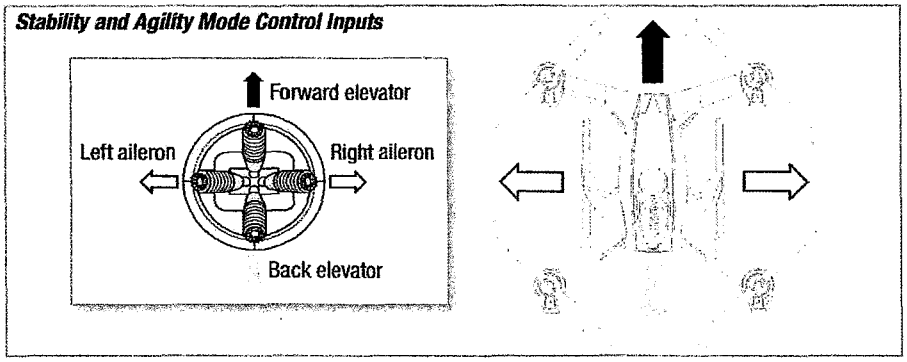
Bind in pressure calibration mode

Flight Mode Switches



Flight Modes Explained





Flight Mode 0 – **Smart Mode (Default)**
(Solid Green Indicator LED)

Stick Relativity–While in **Smart Mode,** the path of the aircraft will always follow the control stick input direction relative to the SAFE Circle, regardless of the direction the nose of the aircraft is pointing.

- *SAFE Circle*™–In most scenarios, the quad will not enter the SAFE Circle.
- *Position Hold*–The aircraft will hold its position when elevator and aileron inputs are at neutral.
- *Self-Leveling*–Brings the 350 QX to a level attitude when the elevator and aileron inputs are at neutral.
- *Altitude Command*–Altitude is relative to throttle stick position.

Flight Mode 1 – **Stability Mode**
(Solid Blue Indicator LED)

- *Self-Leveling*–Brings the 350 QX to a level attitude when the elevator and aileron inputs are at neutral.
- *Position Hold*–The 350 QX uses GPS to hold a given location when this function is activated. If GPS is enabled and has a solid lock, the aircraft will hold its position when elevator or aileron inputs are at neutral.
- *Throttle provides proportional thrust*–The throttle responds directly to the throttle input, giving the pilot direct control over hovering as well as ascent and descent rates.

Flight Mode 2 – **Agility Mode**
(Solid Red Indicator LED)

- *Aerobatic*–Capable of flips and rolls
- *Throttle provides proportional thrust*–The throttle responds directly to the throttle input, giving the pilot direct control over hovering and ascent and descent rates.

The Blade 350 QX flies very differently in the different flight modes. Beginners should use **Smart Mode** to start and progress slowly into **Stability Mode.** When flying in **Smart Mode,** the quadcopter follows stick input based on the set pilot location. When flying in **Stability Mode,** the quadcopter follows stick inputs based on the orientation of the aircraft. The transition from **Smart Mode** to **Stability Mode** can be a challenge for new flyers because the pilot will need to learn how to interpret the aircraft's orientation.

This aircraft is extremely sensitive to control inputs in **Agility Mode** and has NO self leveling. We recommend you fly at low rate settings for the first few flights until you are familiar with its response. For pilots new to quadcopters and helicopters, familiarize yourself with the Blade 350 QX in **Smart Mode** and at low rate.

As you become more familiar with the quadcopter's response, adjust the rates and expo to suit your flying style (if using a computer radio).

NOTICE: Do not attempt to fly your 350 QX in **Stability Mode** or **Agility Mode** until you have familiarized yourself with the operation of the aircraft in **Smart Mode** and read and understand the descriptions of the other flight modes.

Audible Alerts and LED Codes

The motors will Beep under the following conditions:

- Any time the props stop spinning after they have been initialized.
- After 30 seconds of no throttle input (waiting armed on the ground).

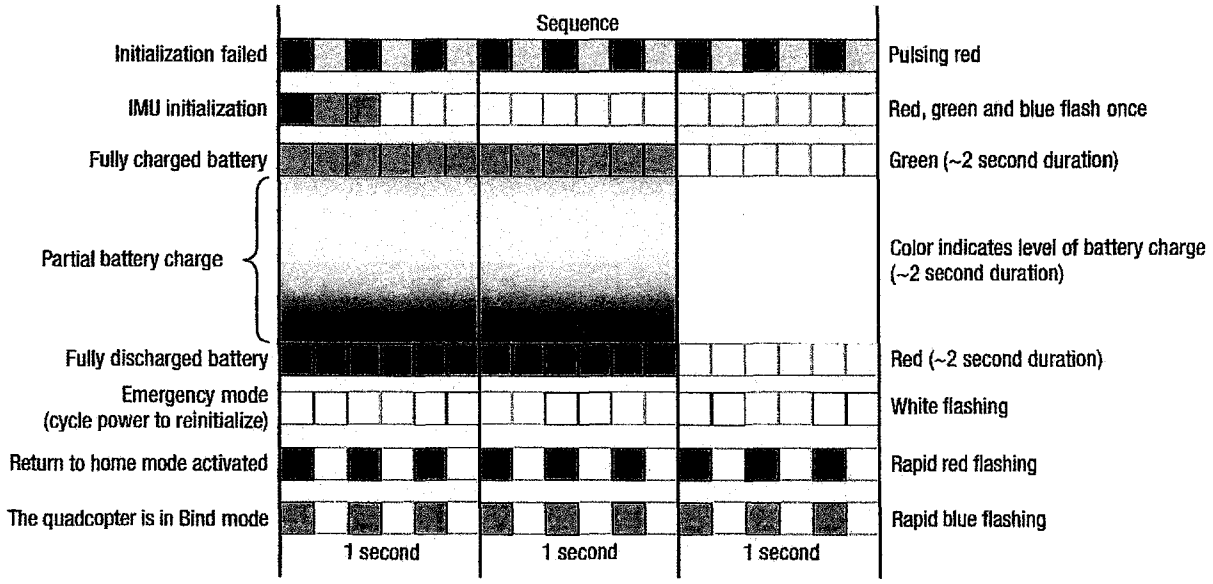
Audible Alerts

Event	Audible Alert
ESC power on	one short beep
Successful initialization	many continuous tones with increasing frequency
RC signal detected after start	one long tone
Bind detected	one long tone
Bind accepted (3 seconds after detected)	one long tone
Thrust stick in correct position for motor start	low, med, high (happy tone)
Cannot start motors because of low voltage	high, med, low (sad tone)
Cannot start motors because vehicle is tilted	high, med, low (sad tone)
Enter ESC ID assignment mode	loud high, low — high, low

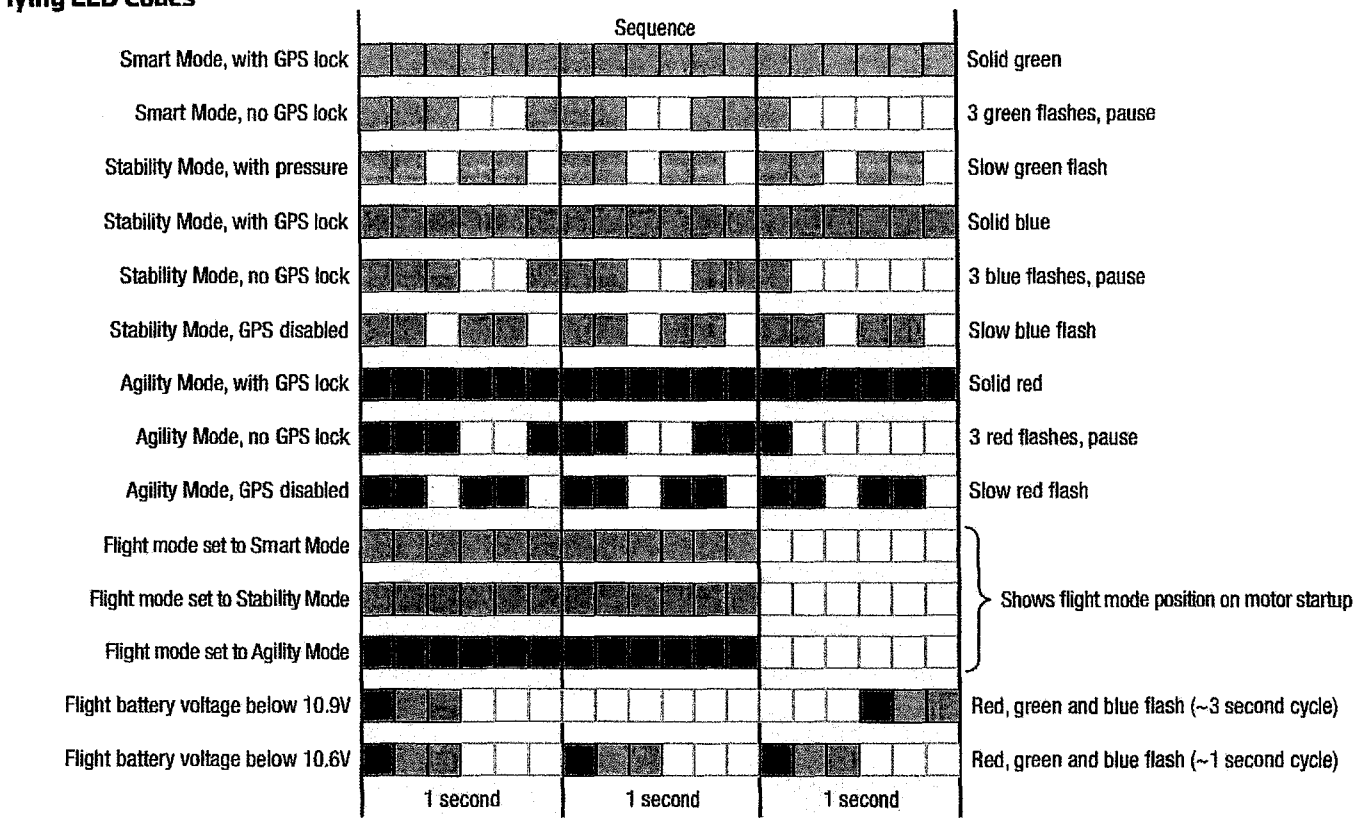
Initialization Audible Alerts

Event	Audible Alert
Gyro, accelerometer sensor error	High, low, 1 short tone
Compass initialization error	High, low, 2 short tones
Pressure sensor initialization error	High, low, 3 short tones
GPS initialization error	High, low, 4 short tones
ESCs not detected	High, low, 6 short tones
Settings saved (i.e. when changed GPS on/off, etc)	Rapid low, med, high — low, med, high
Trim warning (when in Smart or Agility Mode)	Continuous very short, rapid tone
Low-battery warning	Medium frequency, loud tone (every 3 seconds)
Emergency state warning (also after ESC ID assignment)	Once per second loud medium tone

Startup LED Codes



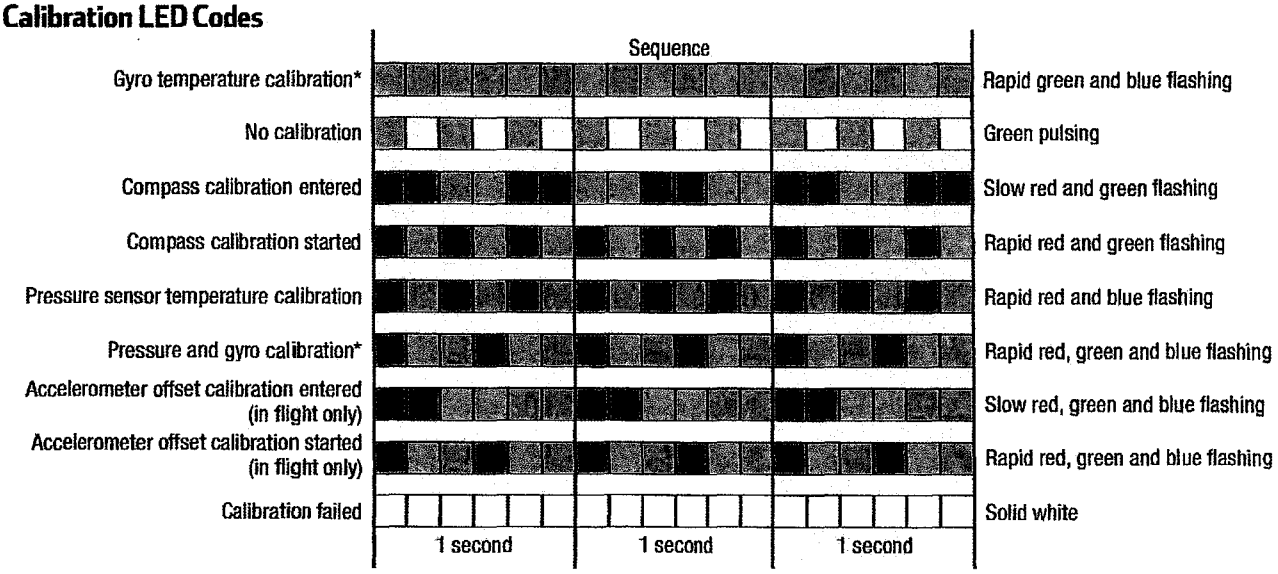
Flying LED Codes



CAUTION: If you see the LED signal for low battery, immediately land your aircraft and recharge the battery.

CAUTION: Do not attempt to use Return Home with a low battery.

Calibration LED Codes



*These items are performed by the manufacturer.

GPS Functionality of the 350 QX

To acquire a reliable GPS signal, it is important the 350 QX has a clear view of the sky. Obstructions that can affect the aircraft's ability to acquire an acceptable signal include:

- Flying close to or around tall/big buildings
- Flying under dense vegetation
- Flying indoors or under a structure

If you lose or cannot acquire a GPS lock and home position, the aircraft will not have Stick Relativity, SAFE Circle, Position Hold or Return Home functions available.

It is not possible to use **Smart Mode** without having GPS enabled. If the 350 QX is initialized without GPS enabled, it will default to **Stability Mode.** The aircraft will still be capable of altitude hold.

If you do not have a GPS signal, try maneuvering the 350 QX by steering with forward elevator and rudder only.

⚠ **CAUTION:** Do not attempt to fly the 350 QX with GPS enabled while indoors or in a location where the GPS signal is known to be poor, as loss of signal could result in a crash.

GPS Functions

(see the binding section for turning GPS functions ON and OFF)

With **GPS ON**

- If the 350 QX took off with GPS lock and a home position set, when Return Home mode is activated the quadcopter will fly back to the start position (maintaining altitude along the way), then reduce altitude to land.
- If the 350 QX should lose GPS when Return Home mode is activated, it will land quickly using the barometric pressure sensor to maintain the descent rate.
- If the 350 QX took off without GPS lock, but acquires a GPS signal in flight, it will land slowly using GPS to hold its position and barometric pressure sensor to maintain the descent rate when Return Home mode is activated.
- If the 350 QX loses GPS during landing in Return Home mode, it will increase the rate of descent and land quickly to avoid drift.
- If the 350 QX deviates too far from its intended GPS path when in Return Home mode, it will descend using the barometric pressure sensor to maintain the descent rate. This could happen if the flight control system loses its orientation because of aggressive flight in 3 axis mode.
- Once the 350 QX has landed in Return Home mode it will disarm the motors

With **GPS OFF**

- If Return Home mode is activated, the 350 QX will level off and land quickly using the barometric pressure sensor to maintain the descent rate.
- Once the 350 QX has landed in Return Home mode it will disarm the motors.

GPS Failure

Upon GPS failure, the 350 QX will respond according to the following conditions:

Smart Mode: (rapid Green flashing LED)

If the 350 QX is in this mode and the GPS fails, the quad will default to **Stability Mode.** The aircraft will still use the pressure sensor to maintain altitude and control rate of descent. If GPS is re-acquired, after 5-10 seconds of reliable GPS signal the **Smart Mode** functions are returned to normal

Stability Mode: (long Blue, two short Green flashing LED)

If the 350 QX is in this mode and the GPS fails, it will not switch to **Smart Mode** and will not enter GPS hold, but will otherwise function normally. If GPS is reacquired, after 5-10 seconds of reliable GPS signal the **Stability Mode** functions are returned to normal

Agility Mode: (long Red, two short Green flashing LED)

If the 350 QX is in this mode and the GPS fails, it will not affect flight performance, but it will not be able to switch into **Smart Mode.** It will still be able to switch into **Stability Mode** with the limitations described above.

Loss of Transmitter Signal

If the transmitter signal is lost for any reason, the 350 QX will respond according to the following conditions:

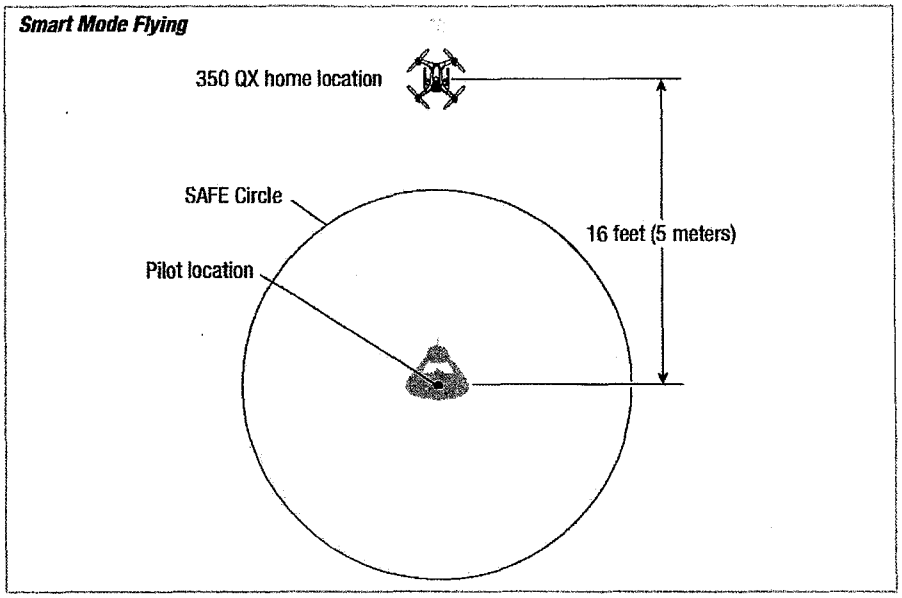
- If the motors are not turning, the 350 QX will disarm.
- If the motors are turning but the 350 QX is not flying, it will turn off the motors and disarm.
- If the 350 QX is flying and has a good GPS lock with a home position set, it will activate the Return Home function upon the loss of the transmitter signal.
- If the compass is not connected or faulty, or if there is no GPS lock, the 350 QX will descend slowly upon the loss of the transmitter signal.
- If the pressure sensor is not working, the 350 QX will reduce power to initiate a controlled descent upon the loss of the transmitter signal.

Flight Guidelines and Warnings

- Always keep aircraft in sight and under control.
- Always keep people and pets at least 35 feet (10 meters) away when the battery is connected.
- Keep children out of the vicinity of this product at all times.
- Always use fully charged batteries.
- Always keep transmitter powered on while aircraft is powered.
- Always remove batteries before disassembly.
- Always keep moving parts clean.
- Always keep parts dry.
- Always let parts cool after use before touching.
- Always remove batteries after use.
- Always have a first aid kit with you.
- Always have an appropriate fire extinguisher with you.
- Never operate aircraft with damaged wiring.
- Never touch moving parts.

The Blade 350 QX has many more features than other Blade quadcopters. Please take the time to read this manual and understand the functions this aircraft contains before flying.

Preparing the 350 QX For Flight



1. Power on the transmitter with the flight mode set to **Smart Mode,** the throttle stick down and the throttle trim at neutral.
2. Install a charged battery, plug it in and close the hatch.
3. With the quad on a level surface, turn on the power switch and allow the 350 QX to initialize.
   If the GPS is enabled, wait for the GPS signal to be acquired, which is indicated by a solid green LED. It may take from 30–90 seconds to acquire a GPS signal.

IMPORTANT: While in **Smart Mode** the motors will not start if a GPS signal has not been acquired.

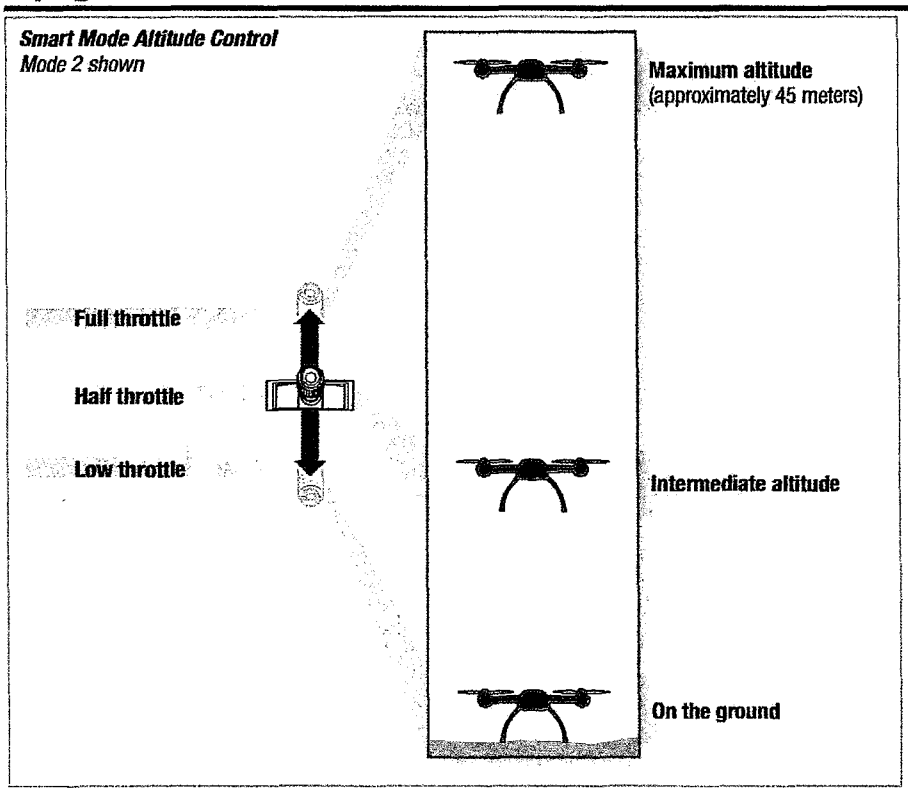
4. Move the aircraft to the desired home location and orient the aircraft pointed away from the pilot.
5. Step back approximately 16 feet (5 meters) from the home location.
6. When you are prepared to fly, quickly move the rudder stick all the way left and then all the way right. The props will begin to spin. The home position for GPS functions is set and your aircraft is ready to fly.

IMPORTANT: The motors will not start if the transmitter is set to low rate. The dual rate switch must be set to high rate.

Lower the throttle stick and the throttle trim to power off the props after flight.

⚠ **CAUTION:** When the home location is set (**step 6**), the 350 QX must be approximately 16 feet (5 meters) from where the pilot will stand during flight, pointing away from the pilot. If the aircraft is pointed in any other direction, the *SAFE Circle* feature will not function as expected and may result in personal injury or damage to property. Once the aircraft's motors are started, do not change your position.

Flying the 350 QX



Takeoff

Increase the throttle slightly above low stick (10–15%). The 350 QX altitude in **Smart Mode** corresponds to the throttle position. Low throttle is on the ground, slightly raising the throttle will produce a low hover, and the higher the throttle position, the higher the 350 QX will ascend until it reaches its maximum altitude (approximately 45 meters).

Explore the flight envelope of the 350 QX in **Smart Mode** without fear of losing orientation. See the diagrams in the *Flight Modes Explained* section for more details on the aircraft's function in **Smart Mode.** In **Smart Mode,** the direction the aircraft is pointing does not affect the control, and the aircraft's response relative to you (*the pilot location*) does not change with orientation. **Stability Mode** and **Agility Mode** operate more like a conventional RC helicopter or multicopter.

IMPORTANT: Aggressive flight in **Agility Mode** will significantly reduce flight time.

Landing

To land the 350 QX there are two options:

- Guide the aircraft to where you wish to land and reduce the throttle. Reduce the throttle trim after landing to disarm the motors.
- Activate the Return Home function to return the 350 QX to the assigned home location and land automatically.

⚠ **CAUTION:** Do not activate the **Return Home** function if the 350 QX is showing the low battery indication. *Manually land the aircraft immediately.*

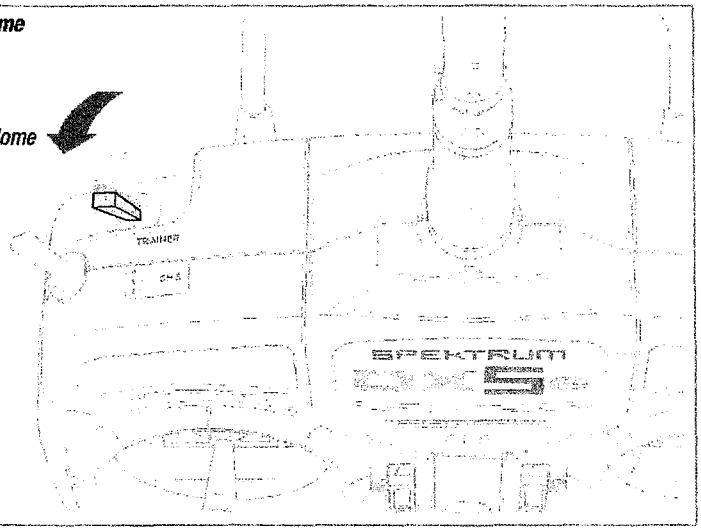
Return Home

- When this feature is activated, the 350 QX will fly back to its assigned home location and land. After landing, the motors may take up to 5 seconds to disarm. If the motors take more than 20+ seconds to disarm, perform the Pressure Sensor Calibration.
- To restart the props after landing in **Return Home,** fully lower the throttle and ensure the throttle trim is neutral, then quickly move the rudder stick fully left and then fully right.

⚠ **CAUTION:** The 350 QX will not recognize the *SAFE Circle* feature when **Return Home** is used. Activating **Return Home** may cause the 350 QX to fly directly over the pilot if the aircraft was flown to a position behind where the pilot was standing when the home position was established.

Activating Return Home

Press and hold.
Releasing the switch will stop the *Return Home* program.



After Your Flight

1. Turn off the power switch on the 350 QX.
2. Turn off the power to your transmitter.
3. Unplug and remove the battery from the 350 QX.

⚠ **CAUTION:** Always disconnect the Li-Po battery from the aircraft when not flying to avoid over-discharging the battery. Batteries discharged to a voltage below the lowest approved voltage may become damaged, resulting in loss of performance and potential fire when batteries are charged.

Location alert

The motors will Beep under the following conditions:

- At any time the props stop spinning after they have been initialized.
- After 30 seconds of no throttle input (waiting armed on the ground).

This will alert the pilot to the location of the aircraft if it lands in a location with low visibility.
Beeping will continue until the battery can no longer supply enough power to the motors.
If the quadcopter crash lands and one or more motors are stopped by an impact, the quadcopter enters emergency mode. The LED will flash white and the motors will beep loudly.

Compass Calibration

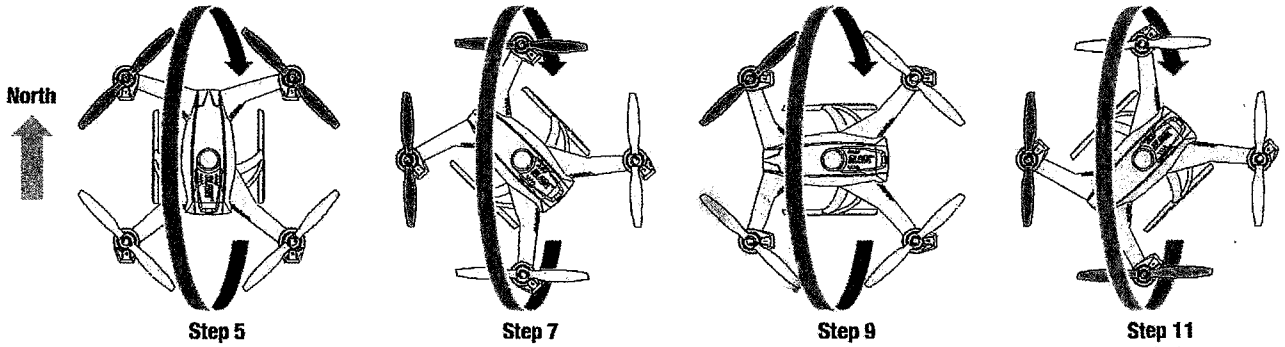
The Flight Controller on the 350 QX has automatic magnetic declination calibration, so you will not have to worry about looking up the magnetic declination at your location and changing settings on your 350 QX to get accurate compass measurements. It is possible, however, that your compass may need to be calibrated if it is exposed to strong magnetic fields.

Compass calibration procedure:

1. Go to an open space outdoors away from metal. Take a conventional compass with you to ensure you know the direction of north.
2. Ensure your transmitter is off and then connect a flight battery to the 350 QX. Power the aircraft on. Wait five seconds and then the blue LED will begin flashing rapidly, signaling the aircraft is initialized and ready to bind.
3. Once the blue light begins flashing, bind with yaw stick left. The 350 QX LED will slowly flash between red and green for 5 seconds.
4. Put the 350 QX flat in your hands and face north. After 5 seconds of slow flashing the quad will start flashing rapidly. The quad is now collecting data to be used for the calibration.
5. Slowly rotate the quad 360 degrees about the east-west axis ("flip" the aircraft either forward or backward) until it is flat in your hands again.
6. Continue facing north and yaw the quad 45 degrees left so the quad is now facing north-west.
7. Slowly rotate the quad 360 degrees about the east-west axis, ("flip" the aircraft diagonally either direction) until it is flat in your hands again.
8. Continue facing north and yaw the quad 45 degrees left so the quad is now facing west.
9. Slowly rotate the quad 360 degrees about the east-west axis ("flip" the quad sideways either direction) until it is flat in your hands again.
10. Continue facing north and yaw the quad 45 degrees left so the quad is now facing south-west.
11. Slowly rotate the quad 360 degrees about the east-west axis ("flip" the aircraft diagonally either direction) until it is flat in your hands again.

You have 30 seconds to complete the procedure. The 350 QX should still be blinking rapidly when you finish. Hold the aircraft still until it stops blinking rapidly. If successful, the 350 QX will beep a positive confirmation and then restart itself. If unsuccessful, the 350 QX displays the failed calibration code, a solid white LED. If the 350 QX displays this error code, power off the aircraft and then begin the calibration procedure again.

Compass Calibration Steps



Pressure Sensor Calibration

The pressure sensor is calibrated at the factory on the 350 QX. Recalibration should only be necessary if you replace the sensor.

1. Place the 350 QX in a cold area. Allow it to remain in the cold for 30 minutes or more.
2. Bring the 350 QX out of the cold and into a warm area. The greater the difference in temperature between the cold and warm areas, the more accurate the calibration will be.
3. Ensure your transmitter is off and then connect a flight battery to the 350 QX and power the aircraft on. Wait five seconds and then the blue LED will begin flashing rapidly, signaling the aircraft is initialized and ready to bind.
4. Once the blue light begins flashing, bind with yaw stick right. The 350 QX will blink red and blue rapidly. Leave the aircraft and transmitter powered on and allow the aircraft to warm up for 10 minutes. Do not move the aircraft during this time.
5. After 10 minutes the motors on the aircraft will beep to indicate the calibration is complete. Power off the aircraft and then your transmitter.

If the 350 QX displays the failed calibration code, power off the aircraft and then begin the pressure calibration procedure again.

Accelerometer Calibration

To calibrate the accelerometer, the quadcopter needs to fly for 20 seconds while being level. This allows the accelerometer readings to be averaged and stored in memory.

Use the following procedure to calibrate the accelerometer:

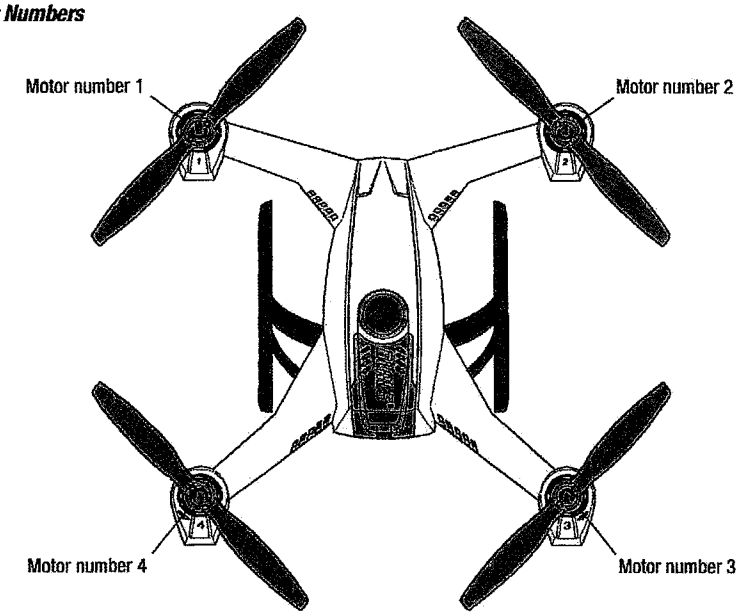
1. Power on the quadcopter with the transmitter off to enter bind mode.
2. Turn on the transmitter while holding the elevator stick back and pressing the bind switch.
3. Set the flight mode switch to Stability Mode or Smart Mode. The quadcopter will fly in Stability Mode no matter which position is selected.
4. Start the motors. Fly the quadcopter off the ground. The quadcopter LED will flash slowly (red, green, blue).
5. Use trims to adjust roll/pitch so the quadcopter does not drift left/right and forward/back.
6. Activate the accelerometer calibration mode by changing the flight mode switch into Agility Mode. The vehicle will still fly in Stability Mode. The LED will start flashing quickly (red, green, blue).
7. Fly steadily for 10–30 seconds. The LED will flash slowly when data collection is done.
8. Land the quadcopter and stop the propellers by lowering the throttle and throttle trim.

IMPORTANT: The calibrated values are not yet permanently stored. Do not turn off the quadcopter.

9. Center the trims on the transmitter. Start the motors and verify the quadcopter flies without drifting.
10. Land the quadcopter and stop the motors by lowering the throttle and throttle trim.
11. Save the calibration by moving the rudder stick quickly left, right, left, right. Values are saved when you hear a rapid triple tone twice.
12. Turn off the quadcopter.
13. Confirm the calibration by powering up the quadcopter and performing a test flight. If the calibration is not correct, start the calibration procedure again.

ESC and Motor Assignment Procedure

Motor Numbers



1. Begin with the transmitter off and connect a flight battery to the 350 QX.
2. Power on the quadcopter on a level surface and wait for the rapid blue flashing LED to indicate the aircraft has entered bind mode.
3. With the throttle stick in the full throttle position, press/pull the bind button/switch and power on your transmitter. The quadcopter will acknowledge the assignment mode with a loud high, then low tone. If your transmitter is equipped with a high throttle warning at startup, it is necessary to disable this alarm prior to completing this step. After the replacement procedure is complete, re-activate the high throttle warning in your transmitter.
4. The motor number and prop direction are molded in the top of the body. The motors will give an audible "beep" to indicate which motor to calibrate. When the motors beep 1 time, spin motor 1 by hand. The motor will respond with the same number of tones upon successful assignment.
5. When the motors beep 2 times, spin motor 2 by hand.
6. When the motors beep 3 times, spin motor 3 by hand.
7. When the motors beep 4 times, spin motor 4 by hand.

When the assignment is successful, the quadcopter enters emergency mode. Restart the quadcopter.

Troubleshooting

Problem	Possible Cause	Solution
350 QX will not initialize	The quadcopter was moved during initialization	Re-arm the aircraft, being cautious to avoid any movement during initialization
	Throttle trim is not in the correct position	The trim may need to be adjusted a click above or below center
GPS will not lock	Heavy overcast	Wait for lighter cloud cover and re-lock or disable GPS
	Solar flares	Wait for disturbance to subside or disable GPS
	Aircraft is indoors	Disable GPS
	Objects blocking clear access to the sky (under a metal cover, inside a car, tall buildings, etc...)	Move aircraft to a clear area
	Video transmitter nearby	Re-position or remove video transmitter
GPS has reduced resolution	Raised threat level by the U.S. government	Wait for threat level to be reduced or disable GPS
	The GPS antenna coaxial cable is nicked, cut, or otherwise damaged	Replace the GPS antenna
GPS functions not operating properly	The compass has been exposed to a magnet	Move the aircraft away from the magnetic source. In worst case scenario, the compass may need to be replaced
	The GPS antenna coaxial cable is nicked, cut, or otherwise damaged	Replace the GPS antenna
	The aircraft is behaving erratically	Rebind the aircraft with the GPS function off
	Aggressive flight	Fly level for a few seconds before flipping into other modes
Motors will not start in Smart Mode	Rate mode switch set to low	Set transmitter dual rate switch to hi
	GPS signal is not aquired	Ensure a GPS signal is aquired
	Rudder trim not centered	Center the rudder trim
Motors will not start in Stability/Agility Mode	Rate mode switch set to low	Set transmitter dual rate switch to hi
	Rudder trim not centered	Center the rudder trim
Blades take a long period of time to shut off after completing return to home	Pressure calibration is needed	Refer to the Pressure Sensor Calibration section of this manual
The quadcopter has trouble finding the home position and the props will not shut off after returning home	Accelerometer calibration is needed	Refer to the Accelerometer Calibration section of this manual

Limited Warranty

What this Warranty Covers

Horizon Hobby, Inc., (Horizon) warrants to the original purchaser that the product purchased (the "Product") will be free from defects in materials and workmanship at the date of purchase.

What is Not Covered

This warranty is not transferable and does not cover (i) cosmetic damage, (ii) damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance, (iii) modification of or to any part of the Product, (iv) attempted service by anyone other than a Horizon Hobby authorized service center, (v) Product not purchased from an authorized Horizon dealer, or (vi) Product not compliant with applicable technical regulations.

OTHER THAN THE EXPRESS WARRANTY ABOVE, HORIZON MAKES NO OTHER WARRANTY OR REPRESENTATION, AND HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

Purchaser's Remedy

Horizon's sole obligation and purchaser's sole and exclusive remedy shall be that Horizon will, at its option, either (i) service, or (ii) replace, any Product determined by Horizon to be defective. Horizon reserves the right to inspect any and all Product(s) involved in a warranty claim. Service or replacement decisions are at the sole discretion of Horizon. Proof of purchase is required for all warranty claims. SERVICE OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY.

Limitation of Liability

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY, REGARDLESS OF WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY, EVEN IF HORIZON HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability. If you as the purchaser or user are not prepared to accept the liability associated with the use of the Product, purchaser is advised to return the Product immediately in new and unused condition to the place of purchase.

Law

These terms are governed by Illinois law (without regard to conflict of law principals). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Horizon reserves the right to change or modify this warranty at any time without notice.

WARRANTY SERVICES

Questions, Assistance, and Services

Your local hobby store and/or place of purchase cannot provide warranty support or service. Once assembly, setup or use of the Product has been started, you must contact your local distributor or Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please visit our website at www.horizonhobby.com, submit a Product Support Inquiry, or call the toll free telephone number referenced in the Warranty and Service Contact Information section to speak with a Product Support representative.

Inspection or Services

If this Product needs to be inspected or serviced and is compliant in the country you live and use the Product in, please use the Horizon Online Service Request submission process found on our website or call Horizon to obtain a Return Merchandise Authorization (RMA) number. Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. An Online Service Request is available at http://www.horizonhobby.com/content/_service-center_render-service-center. If you do not have internet access, please contact Horizon Product Support to obtain a RMA number along with instructions for submitting your product for service. When calling Horizon, you will be asked to provide your complete name, street address, email address and phone number where you can be reached during business hours. When sending product into Horizon, please include your RMA number, a list of the included items, and a brief summary of the problem. A copy of your original sales receipt must be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

NOTICE: Do not ship Li-Po batteries to Horizon. If you have any issue with a Li-Po battery, please contact the appropriate Horizon Product Support office.

Warranty Requirements

For Warranty consideration, you must include your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions have been met, your Product will be serviced or replaced free of charge. Service or replacement decisions are at the sole discretion of Horizon.

Non-Warranty Service

Should your service not be covered by warranty, service will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost. By submitting the item for service you are agreeing to payment of the service without notification. Service estimates are available upon request. You must include this request with your item submitted for service. Non-warranty service estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Horizon accepts money orders and cashier's checks, as well as Visa, MasterCard, American Express, and Discover cards. By submitting any item to Horizon for service, you are agreeing to Horizon's Terms and Conditions found on our website http://www.horizonhobby.com/content/_service-center_render-service-center.

ATTENTION: Horizon service is limited to Product compliant in the country of use and ownership. If received, a non-compliant Product will not be serviced. Further, the sender will be responsible for arranging return shipment of the un-serviced Product, through a carrier of the sender's choice and at the sender's expense. Horizon will hold non-compliant Product for a period of 60 days from notification, after which it will be discarded.

Warranty and Service Contact Information

Country of Purchase	Horizon Hobby	Contact Information	Address
United States of America	Horizon Service Center (Repairs and Repair Requests)	servicecenter.horizonhobby.com/RequestForm/	4105 Fieldstone Rd Champaign, Illinois, 61822 USA
	Horizon Product Support (Product Technical Assistance)	www.quickbase.com/db/bghj7ey8c?a=GenNewRecord 888-959-2304	
	Sales	sales@horizonhobby.com 888-959-2304	
United Kingdom	Service/Parts/Sales: Horizon Hobby Limited	sales@horizonhobby.co.uk +44 (0) 1279 641 097	Units 1–4 , Ployters Rd, Staple Tye Harlow, Essex, CM18 7NS, United Kingdom
Germany	Horizon Technischer Service	service@horizonhobby.de	Christian-Junge-Straße 1 25337 Elmshorn, Germany
	Sales: Horizon Hobby GmbH	+49 (0) 4121 2655 100	
France	Service/Parts/Sales: Horizon Hobby SAS	infofrance@horizonhobby.com +33 (0) 1 60 18 34 90	11 Rue Georges Charpak 77127 Lieusaint, France
China	Service/Parts/Sales: Horizon Hobby – China	info@horizonhobby.com.cn +86 (021) 5180 9868	Room 506, No. 97 Changshou Rd. Shanghai, China 200060

FCC Information

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

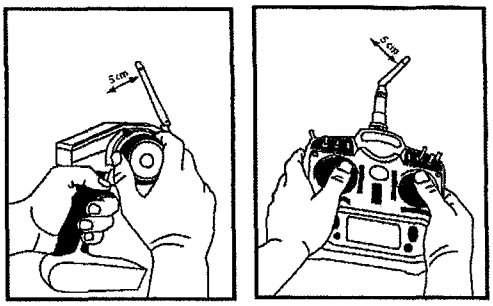
CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This product contains a radio transmitter with wireless technology which has been tested and found to be compliant with the applicable regulations governing a radio transmitter in the 2.400GHz to 2.4835GHz frequency range.

Antenna Separation Distance

When operating your Spektrum transmitter, please be sure to maintain a separation distance of at least 5 cm between your body (excluding fingers, hands, wrists, ankles and feet) and the antenna to meet RF exposure safety requirements as determined by FCC regulations.

The following illustrations show the approximate 5 cm RF exposure area and typical hand placement when operating your Spektrum transmitter.



IC Information

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

Compliance Information for the European Union

AT	BE	BG	CZ	CY	DE	DK
EE	ES	FI	FR	GR	HR	HU
IE	IT	LT	LU	LV	MT	NL
PL	PT	RO	SE	SI	SK	UK
IS	LI	NO	CH			

Declaration of Conformity

(in accordance with ISO/IEC 17050-1)

No. HH2013080502

Product(s): BLH 350 QX RTF

Item Number(s): BLH7800, BLH7800M1

Equipment class: 2

The object of declaration described above is in conformity with the requirements of the specifications listed below, following the provisions of the European R&TTE directive 1999/5/EC, EMC Directive 2004/108/EC and LVD Directive 2006/95/EC:

EN 300-328 V1.7.1: 2006
EN 301 489-1 V1.9.2: 2012
EN 301 489-17 V2.1.1: 2009

EN60950-1:2006+A11:2009+A1:2010+A12: 2011
EN61000-3-2:2006+A1:2009+A2:2009
EN61000-3-3:2008

EN55022:2010 + AC:2011
EN55024:2010

CE

Signed for and on behalf of:
Horizon Hobby, Inc.
Champaign, IL USA
Aug 05, 2013

Robert Peak
Chief Financial Officer
Horizon Hobby, Inc.

Declaration of Conformity

(in accordance with ISO/IEC 17050-1)

No. HH2013080503

Product(s): BLH 350 QX BNF

Item Number(s): BLH7880

Equipment class: 1

The object of declaration described above is in conformity with the requirements of the specifications listed below, following the provisions of the European R&TTE directive 1999/5/EC, EMC Directive 2004/108/EC and LVD Directive 2006/95/EC:

EN 301 489-1 V1.9.2: 2012
EN 301 489-17 V2.1.1: 2009

EN61000-3-2:2006+A1:2009+A2:2009
EN61000-3-3:2008
EN60950-1:2006+A11:2009+A1:2010+A12: 2011

EN55022:2010 + AC:2011
EN55024:2010

CE

Signed for and on behalf of:
Horizon Hobby, Inc.
Champaign, IL USA
Aug 05, 2013

Robert Peak
Chief Financial Officer
Horizon Hobby, Inc.

Instructions for disposal of WEEE by users in the European Union

This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collections point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.

Created 9/13 42408

Blade® 350 QX Firmware 2.0 Update and Quick-Start Guide

This Blade 350 QX has been updated with Firmware 2.0 to provide the best experience. This slipsheet covers the updates and includes a new Quick-Start Guide.

New Start Procedure

There are now two options to start the motors:

Original Procedure: At zero throttle, move the rudder stick full left, then full right, then back to center.

New Procedure: Move both sticks into the bottom inside corners, then back to center.

New Flight Mode Configuration

Smart Mode (Solid Green LED = GPS Lock, Blinking Green LED = No GPS Lock): Stick Relativity, SAFE Circle™ feature, Altitude and GPS Lock and Self-Leveling

AP Mode (Solid Purple LED = GPS Lock, Blinking Purple LED = No GPS Lock): Altitude and GPS Lock with soft Self-Leveling

Stability Mode (Solid Blue LED = GPS Lock, Blinking Blue LED = No GPS Lock): Self-Leveling, GPS Lock

**Agility Mode (Red LED):* Only available with Spektrum™ DX6i or higher transmitters (Endpoint adjustment is necessary)

New Compass and GPS Error Detection

The Firmware 2.0 update prevents GPS and compass errors from causing adverse flight conditions. The status LED blinks orange if the compass senses a magnet or metal object nearby. When the status LED blinks orange, follow the Compass Calibration instructions found in the full manual online at www.horizonhobby.com.

New Charger

This version comes with a new 12V DC accessory charger that plugs into a 12V auxiliary power port, like the one found in your car. This charger functions exactly the same as the original charger but has a 12V DC accessory power connector instead of DC alligator clips.

Quick-Start Guide

WARNING: This quick-start guide is only intended to cover the basic operation of the 350 QX in Smart Mode. For a complete description of the function, capabilities and maintenance of the Blade 350 QX, please see the full manual online at *www.horizonhobby.com.*

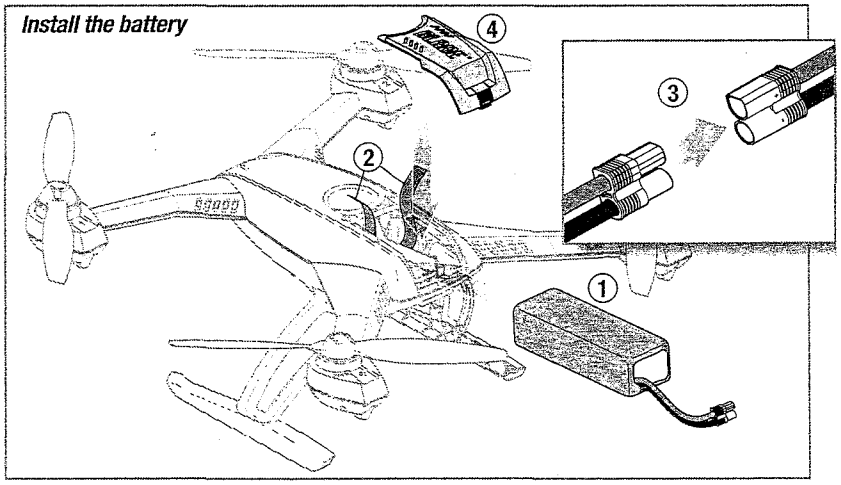
Box Contents

- Blade® 350 QX Firmware 2.0
- Camera Mount
- 3S 11.1V 2200mAh Li-Po Battery Pack
- 2–3S DC Li-Po Balancing Charger
- DX5e DSMX® 5-Channel Transmitter (*RTF only*)
- 4 AA Batteries (*RTF only*)

Charging the Flight Battery

1. Connect the charger to an appropriate 12V DC auxiliary power port. A beep sounds and the green LED blinks.
2. Turn the control on the amps selector so the arrow points to 2.0 amps. DO NOT change the charge rate once the battery begins charging.
3. Move the cell selector switch to 3-cell.
4. Connect the balancing lead of the battery to the 3-cell (4 pin) charger port and press the Start button to begin battery charging.
5. The red LED blinks, indicating charging. When the battery nears full charge, the red and green LEDs blink, indicating cell balancing.
6. Disconnect the battery when a beep sounds and the green LED glows solid.
7. Install the flight battery (*see illustration*).

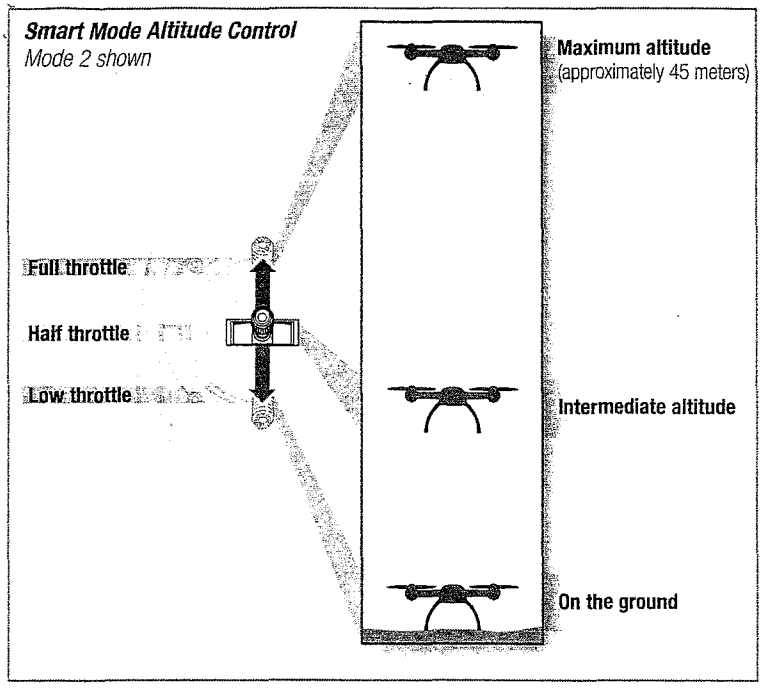
Install the battery

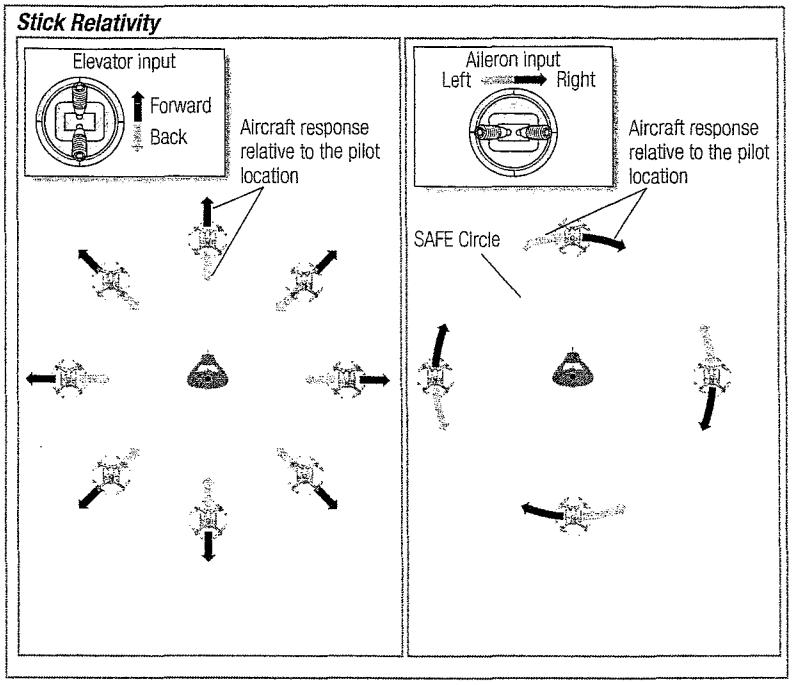


Powering On

1. Power ON the transmitter.
2. Set the Rate Switch to Hi.
3. Set the Channel 5 Switch to 0 for Smart Mode.
4. Fully lower the throttle stick.
5. Place the 350 QX on a level surface outside with the status LED towards you.
6. Power ON the 350 QX.
7. Step back approximately16 feet (5 meters).
8. Ensure the status LED is solid green, indicating GPS lock.
9. Move the rudder stick full left, then full right, then back to center, setting the Home position and starting the motors.
10. Increase the throttle stick to begin flying.

Flying



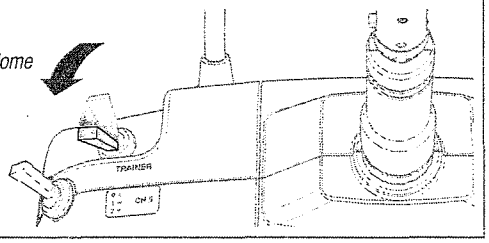


Landing

1. There are two options for landing:
   - Fully lower the throttle stick to land and lower the throttle trim to stop the motors.
   - Press and hold the Return Home Switch until the aircraft has landed (*see illustration*).
2. After landing, power OFF the 350 QX.
3. Power OFF the transmitter.
4. Disconnect the flight battery.

Activating Return Home

Press and hold.
Releasing the switch will stop the *Return Home* program.



Compliance Information for the European Union

AT	BE	BG	CZ	CY	DE	DK
EE	ES	FI	FR	GR	HR	HU
IE	IT	LT	LU	LV	MT	NL
PL	PT	RO	SE	SI	SK	UK
IS	LI	NO	CH			

Declaration of Conformity
(in accordance with ISO/IEC 17050-1)
No. HH2013080502
Product(s): BLH 350 QX RTF
Item Number(s): BLH7800A, BLH7800AM1
Equipment class: 2
The object of declaration described above is in conformity with the requirements of the specifications listed below, following the provisions of the European R&TTE directive 1999/5/EC, EMC Directive 2004/108/EC and LVD Directive 2006/95/EC:

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EN 301 489-1 V1.9.2: 2012
EN 301 489-17 V2.1.1: 2009
EN60950-1:2006+A11:2009+A1:2010+A12: 2011
EN61000-3-2:2006+A1:2009+A2:2009
EN61000-3-3:2008
EN55022:2010 + AC:2011
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CE

Signed for and on behalf of:
Horizon Hobby, Inc.
Champaign, IL USA
Aug 05, 2013

Robert Peak
Chief Financial Officer
Horizon Hobby, Inc.

Declaration of Conformity
(in accordance with ISO/IEC 17050-1)
No. HH2013080503
Product(s): BLH 350 QX BNF
Item Number(s): BLH7880A
Equipment class: 1
The object of declaration described above is in conformity with the requirements of the specifications listed below, following the provisions of the European R&TTE directive 1999/5/EC, EMC Directive 2004/108/EC and LVD Directive 2006/95/EC:

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Blade 350 QX Firmware 2.0 Update und Quick-Start Anleitung

Dieser Blade 350 QX wurde auf die Firmwareversion 2.0 aktualisiert. Diese Quick Start Anleitung beschreibt die Aktualisierung.

Neuer Startvorgang

Sie haben nun zwei Möglichkeiten die Motoren zu starten:

Original Startvorgang: Bewegen Sie mit dem Gashebel auf Gas Niedrig Position den Seitenrudersteuerhebel voll nach links, dann voll nach rechts und zurück in die Mitte.

Neuer Startvorgang: Bewegen Sie beide Steuerhebel in die unteren beiden inneren Ecken und dann zurück in die Mitte.

Neue Flugmodekonfiguration

Smart Mode (grüne LED leuchtet = GPS-Signalempfang, grüne LED blinkt = kein GPS-Signalempfang): Steuerknüppelorientierung, SAFE Sicherheitszone, Höhen- und GPS-Positionshaltung, selbstaufrichtend

AP Mode (lila LED leuchtet= GPS-Signalempfang, lila LED blinkt =kein GPS-Signalempfang): Höhen- und GPS-Positionshaltung, gemäßigt selbstaufrichtend

Stabilätsmode (blaue LED leuchtet= GPS-Signalempfang, lila LED blinkt =kein GPS-Signalempfang)

**Agilitätsmode (rote LED)* Nur verfügbar mit Spektrum DX6i oder höher Sender (da Endpunkteinstellung notwendig)

Neue Kompass und GPS Fehlererkennung

Das Update auf die Firmware 2.0 verhindert GPS- und Kompassfehler und damit verbundene Flugfehler. Registriert der Kompass in seiner Nähe ein metallisches oder magnetisches Objekt, blinkt die Status LED gelb. Folgen Sie dann den in der Bedienungsanleitung beschriebenen Vorgang zur Kompasskalibrierung unter www.horizonhobby.com.

Neues Ladegerät

Diese Version wird mit einem DC 12 Volt Ladegerät mit 12 Volt Steckdosenanschluss (Zigarettenanzünder wie in Autos üblich,) statt Krokodilklemmen geliefert.

Setinhalt

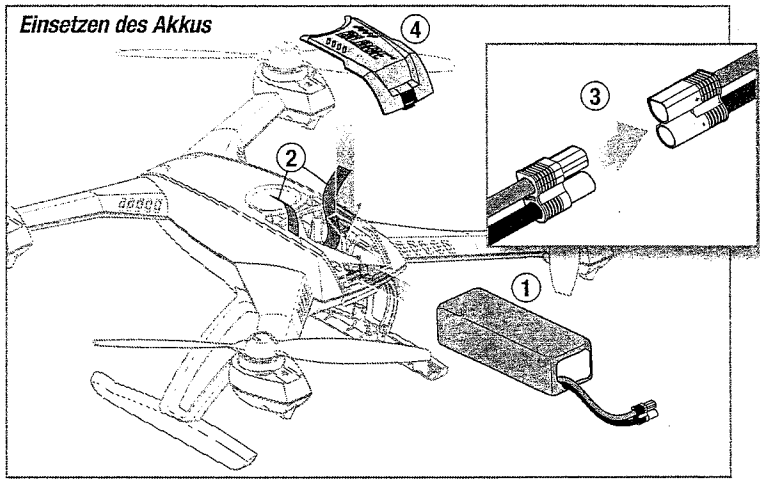
- Blade 350 QX Firmware 2.0
- Kamerahalter
- 3S 11.1V 2200 mAh LiPo Akku
- 2-3S 12V LiPo Balancer Lader
- DX5e DSMX 5 Kanal Sender (nur in der RTF Version)
- 4 AA Batterien (nur RTF Version)

Quick Start Anleitung

WARNUNG: Diese Quick Start Anleitung beschreibt nur die grundlegenden Funktionen des Blade 350QX im Smart Mode. Die vollständige Beschreibung aller Eigenschaften, Funktionen und notwendige Wartung lesen Sie in der Anleitung unter www.horizonhobby.com.

Laden des Flugakku

1. Schließen Sie das Ladegerät an einen geeigneten 12 Volt DC Stromanschluss an. Ein Piepton ertönt und eine grüne LED blinkt.
2. Drehen Sie den Ampereregler auf dem Ladegerät so, dass der Pfeil auf 2.0A zeigt. Ändern Sie NICHT den Ladestrom wenn der Ladevorgang begonnen hat.
3. Stellen Sie den Zellenwahlschalter auf 3S.
4. Verbinden Sie den Balanceranschluss des Akkus mit dem 3S (4 Pins) Ladeanschluss und drücken dann den Startknopf um mit dem Ladevorgang zu beginnen.
5. Die blinkende rote LED zeigt den Ladevorgang an. Ist der Ladevorgang nahezu abgeschlossen, zeigen die blinkende rote und grüne LED den Balanciervorgang an.
6. Trennen Sie den Akku vom Ladegerät wenn ein Piepton ertönt und grüne LED leuchtet.
7. Setzen Sie den Flugakku ein.(siehe Abbildung)

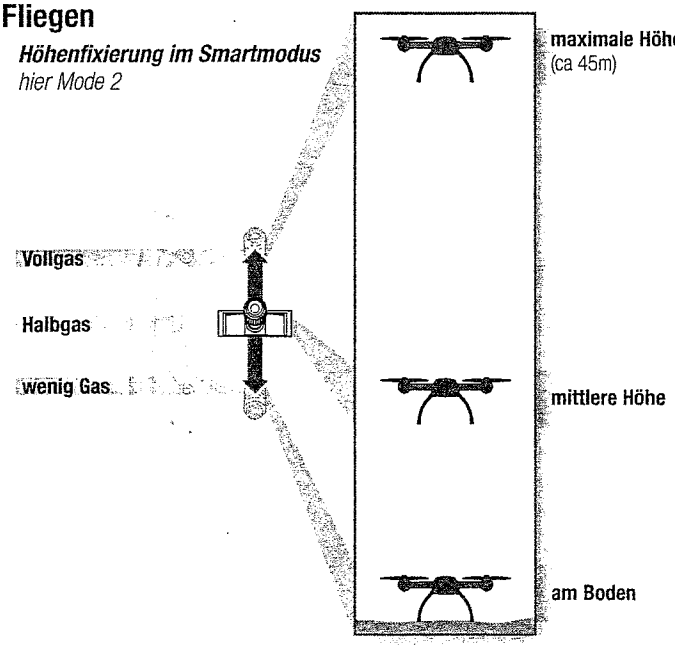


Einschalten

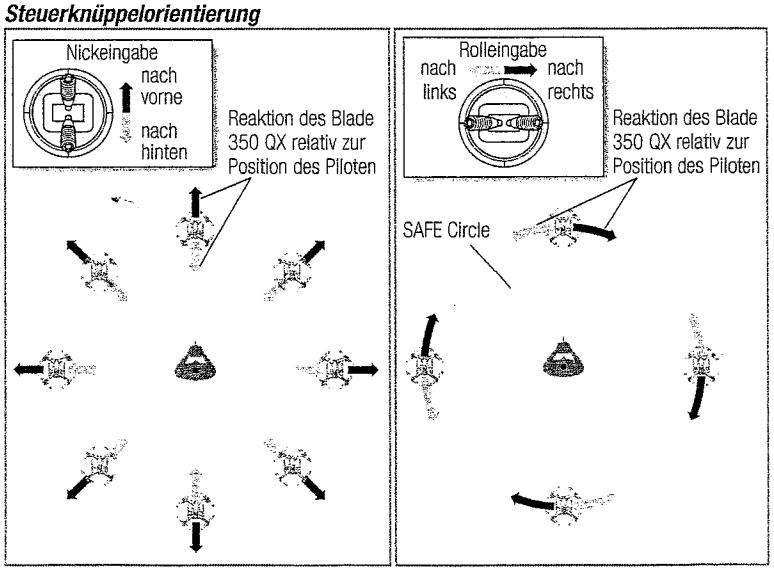
1. Schalten Sie den Sender ein.
2. Stellen Sie den Dual Rate Schalter auf Hi.
3. Stellen Sie den Kanal 5 Schalter für den Smart Mode auf 0.
4. Bringen Sie den Gashebel ganz nach unten auf Leerlauf.
5. Setzen Sie den 350QX auf eine ebene Oberfläche, so dass die Status LED zu Ihnen zeigt.
6. Schalten Sie den 350QX ein.
7. Treten Sie 5 Meter zurück.
8. Versichern Sie sich, dass die Status LED grün leuchtet und damit das GPS Signal empfangen wird.
9. Bewegen Sie den Seitenrudersteuerhebel voll nach nach links, dann voll nach rechts. Das speichert die Rückkehrposition und startet die Motoren.
10. Geben Sie Gas und beginnen zu fliegen.

Fliegen

Höhenfixierung im Smartmodus
hier Mode 2



Steuerknüppelorientierung



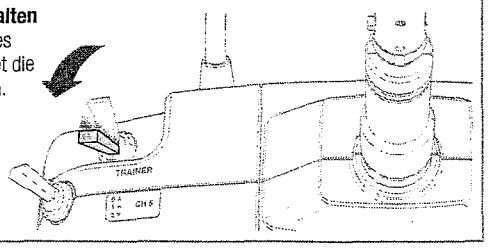
DE

Landen

1. Es gibt zwei Möglichkeiten zu landen:
   - Bringen Sie den Gashebel auf Leerlauf und schalten mit der Gastrimmung die Motoren aus.
   - Drücken und halten Sie den Rückkehrbutton bis der Copter gelandet ist (siehe Abbildung).
2. Schalten Sie nach der Landung den 350QX aus.
3. Schalten Sie den Sender aus.
4. Trennen Sie den Flugakku.

Aktivierung der Rückkehrfunktion

Drücken und halten
Das Loslassen des Schalters beendet die Rückkehrfunktion.



Rechtliche Informationen für die Europäische Union

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HORIZON HOBBY - GmbH

Konformitätserklärung

Konformitätserklärung laut Allgemeine Anforderungen (ISO/IEC 17050-1:2004, korrigierte Fassung 2007-06-15); Deutsche und Englische Fassung EN ISO/IEC 17050-1:2010

Declaration of conformity (in accordance with ISO/IEC 17050-1)

No. HH2013080502

Horizon Hobby GmbH
Christian-Junge-Straße 1
D-25337 Elmshorn

erklärt das Produkt: BLH 350 QX RTF — BLH7800A, BLH7800AM1
declares the product: BLH 350 QX RTF — BLH7800A, BLH7800AM1

Geräteklasse: 2
equipment class: 2

den grundlegenden Anforderungen des §3 und den übrigen einschlägigen Bestimmungen des FTEG (Artikel 3 der R&TTE) entspricht, EMV-Richtlinie 2004/108/EC und LVD 2006/95/EC.

complies with the essential requirments of §3 and other relevant provisions of the FTEG (Article 3 of the R&TTE directive), EMC Directive 2004/108/EC and LVD 2006/95/EC.

Angewendete harmonisierte Normen:
Harmonised standards applied:

EN 300-328 V1.7.1: 2006
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EN 301 489-17 V2.1.1: 2009

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CE

Elmshorn,
05.08.2013

Klaus Breer
Geschäftsführer
Managing Director

Robert Peak
Chief Financial Officer
Horizon Hobby, Inc.

Horizon Hobby GmbH; Christian-Junge-Straße 1, 25337 Elmshorn
HR Pi: HRB 1909; USt/DNr.:DE812678792; Str.Nr.: 1829812324
Geschäftsführer: Klaus Breer, Robert Peak Tel.: +49 (0) 4121 2655 100 Fax: +49 (0) 4121 2655 111
eMail: info@horizonhobby.de; Internet: www.horizonhobby.de Es gelten unsere allgemeinen Geschäftsbedingungen, die in unseren Geschäftsräumen eingesehen werden können.

HORIZON HOBBY - GmbH

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Geräteklasse: 1
equipment class: 1

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Geschäftsführer: Klaus Breer, Robert Peak Tel.: +49 (0) 4121 2655 100 Fax: +49 (0) 4121 2655 111
eMail: info@horizonhobby.de; Internet: www.horizonhobby.de Es gelten unsere allgemeinen Geschäftsbedingungen, die in unseren Geschäftsräumen eingesehen werden können.
Ware bleibt bis zur vollständigen Bezahlung Eigentum der Horizon Hobby GmbH

Anweisungen zur Entsorgung von Elektro- und Elektronik-Altgeräten für Benutzer in der Europäischen Union

Dieses Produkt darf nicht zusammen mit anderem Abfall entsorgt werden. Stattdessen ist der Benutzer dafür verantwortlich, unbrauchbare Geräte durch Abgabe bei einer speziellen Sammelstelle für das Recycling von unbrauchbaren elektrischen und elektronischen Geräten zu entsorgen. Die separate Sammlung und das Recycling von unbrauchbaren Geräten zum Zeitpunkt der Entsorgung hilft, natürliche Ressourcen zu bewahren und sicherzustellen, dass Geräte auf eine Weise wiederverwertet werden, bei der die menschliche Gesundheit und die Umwelt geschützt werden. Weitere Informationen dazu, wo Sie unbrauchbare Geräte zum Recycling abgeben können, erhalten Sie bei lokalen Ämtern, bei der Müllabfuhr für Haushaltsmüll sowie dort, wo Sie das Produkt gekauft haben.

Blade 350 QX version 2.0 et guide de démarrage rapide

Ce Blade 350 QX possède la version 2.0 du logiciel. Ce feuillet vous présente les nouvelles fonctions et le nouveau guide de démarrage.

Nouvelle procédure de démarrage

Il y a maintenant 2 options pour démarrer les moteurs:

Procédure classique: Manche des gaz en bas, déplacez le manche de dérive totalement à gauche, puis totalement à droite et replacez le manche de dérive au neutre.

Nouvelle procédure: déplacez les 2 manches dans leurs coins intérieurs bas, puis replacez-les au neutre.

Nouvelle configuration des modes de vol

Mode Smart (DEL verte fixe = Verrouillage GPS, DEL verte clignotante= Pas de verrouillage GPS): Relativité des manches, cercle SAFE, verrouillage GPS, verrouillage de l'altitude et stabilisation automatique

Mode AP (DEL violette fixe = Verrouillage GPS, DEL violette clignotante= Pas de verrouillage GPS): Verrouillage GPS, verrouillage de l'altitude et stabilisation automatique

Mode Stabilité (DEL bleue fixe = Verrouillage GPS, DEL bleue clignotante= Pas de verrouillage GPS): Verrouillage GPS et stabilisation automatique

**Mode Agilité (DEL rouge):* Seulement disponible à partir des émetteurs Spektrum DX6i et supérieurs (Un réglage des fins de courses est nécessaire)

Détection d'erreur du compas et du GPS

La version 2.0 du logiciel permet d'éviter les conditions de vol erratiques dues à un défaut de calibration du GPS ou du compas. La DEL de statut clignote en orange si le capteur du compas détecte à sa proximité un aimant ou une masse métallique. Quand la DEL clignote en orange, suivez les instructions relatives à la calibration du compas situées dans le manuel téléchargeable sur www.horizonhobby.com.

Le nouveau chargeur

Cette nouvelle version est livrée avec un chargeur se connectant sur la prise allume cigare 12V de votre véhicule. Ce chargeur a un fonctionnement identique à celui de la version précédente, la seule différence provient de sa prise allume cigare replaçant les pinces crocodile.

Guide démarrage rapide

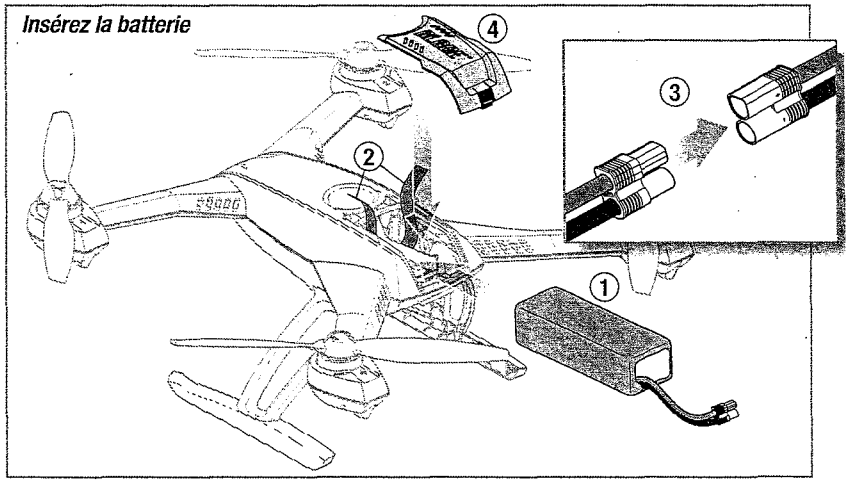
AVERTISSEMENT: Ce guide de démarrage rapide couvre uniquement une utilisation basique du 350QX en Mode Smart. Pour des informations détaillées relatives aux fonctions et la maintenance à effectuer sur le Blade 350 QX, veuillez consulter le manuel complet sur la page www.horizonhobby.com.

Contenu de la boîte

- Un Blade 350 QX V2.0
- Un support de caméra
- Une batterie Li-Po 3S 11.1V 2200mA
- Un chargeur équilibreur Li-Po 2-3S
- Un émetteur Spektrum DX5e DSMX 5 voies (Version RTF uniquement)
- 4 piles AA (Version RTF uniquement)

Charge de la batterie

1. Connectez le chargeur à une prise allume cigare 12V DC, un bip sera émit et la DEL verte clignote.
2. Réglez le sélecteur d'intensité de charge sur 2A. NE PAS changer cette valeur après le lancement de la charge.
3. Placez l'interrupteur de sélection du nombre d'éléments en position 3S.
4. Connectez le câble d'équilibrage de la batterie au port de charge pour 3 éléments (il comporte 4 broches) et appuyez sur le bouton Start pour démarrer la charge.
5. La DEL rouge se met à clignoter, indiquant que le charge est en cours. Quand la fin de la charge approche, la DEL rouge et la DEL verte clignotent pour indiquer le passage en mode équilibrage.
6. Déconnectez la batterie après l'émission d'un bip et quand la DEL est verte fixe.
7. Installez la batterie dans le Blade 350 QX (Voir illustration).



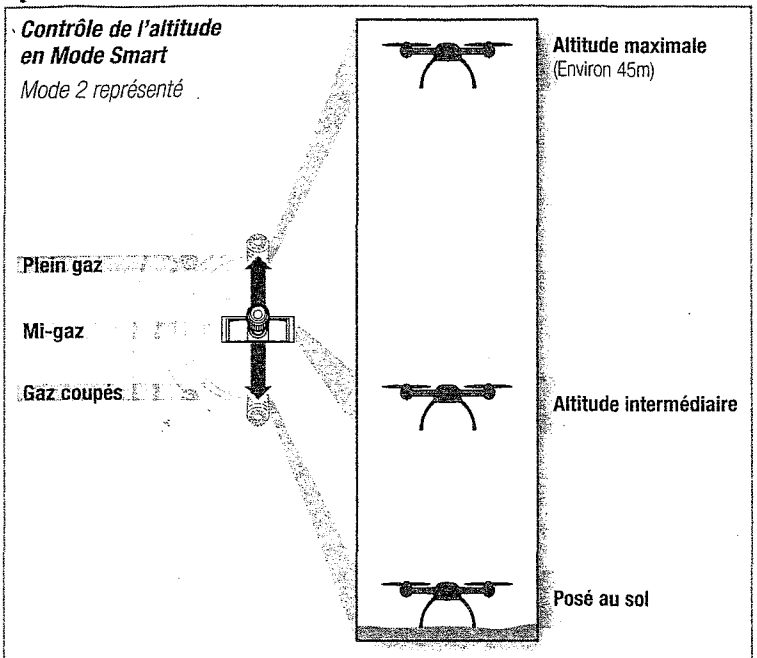
Démarrage

1. Mettez l'émetteur sous tension.
2. Placez l'interrupteur des débattements (D-rate) en position grand débattements (Hi).
3. Placez l'interrupteur de la voie 5 en position 0 pour le Mode Smart.
4. Placez le manche des gaz en position basse.
5. Placez le 350QX en extérieur sur une surface de niveau, la DEL de statut face à vous.
6. Mettez le 350 QX sous tension.
7. Reculez d'environ 5m.
8. Assurez-vous que la DEL de statut est verte fixe, indiquant un verrouillage GPS.
9. Déplacez le manche de dérive totalement à gauche, puis totalement à droite et replacez le manche de dérive au neutre afin d'enregistrer la position pour le retour automatique.
10. Augmentez les gaz pour commencer le vol.

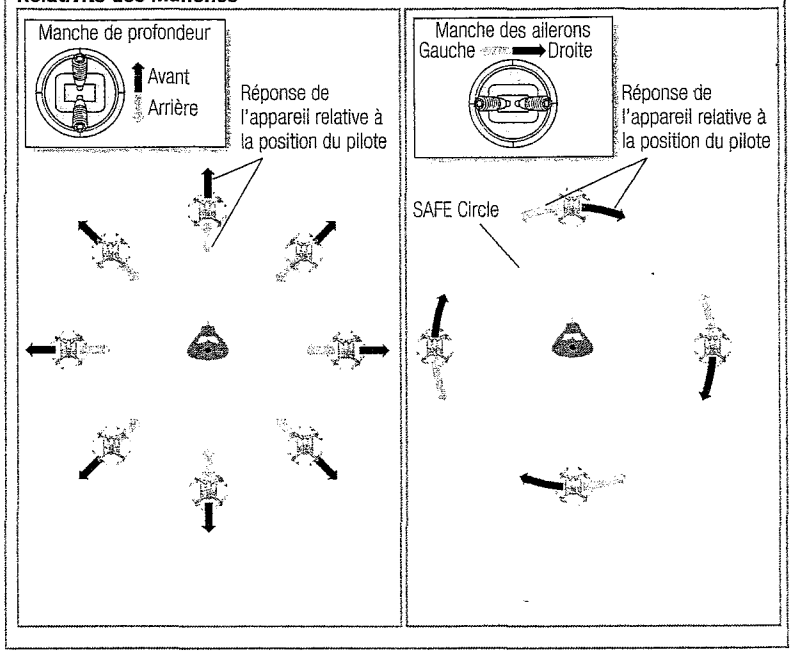
Pilotage

Contrôle de l'altitude en Mode Smart

Mode 2 représenté



Relativité des manches

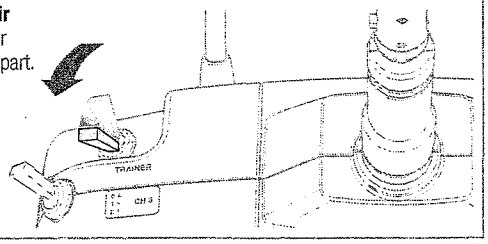


Atterrissage

1. 2 options s'offrent à vous pour effectuer l'atterrissage:
   - En baissant le manche des gaz pour atterrir et en baissant le trim des gaz pour couper les moteurs.
   - En pressant et maintenant appuyé le l'interrupteur de retour automatique (Voir illustration).
2. Mettez le 350 QX hors tension après l'atterrissage.
3. Mettez l'émetteur hors tension.
4. Déconnectez la batterie.

Activer la fonction Retour départ

Presser et maintenir
Relâcher l'interrupteur annulera le Retour départ.



Informations de conformité pour l'Union européenne

AT	BE	BG	CZ	CY	DE	DK
EE	ES	FI	FR	GR	HR	HU
IE	IT	LT	LU	LV	MT	NL
PL	PT	RO	SE	SI	SK	UK
IS	LI	NO	CH			

Déclaration de conformité
(conformément à la norme ISO/IEC 17050-1)
No. HH2013080502
Produit(s) : BLH 350 QX RTF
Numéro(s) d'article : BLH7800A, BLH7800AM1
Catégorie d'équipement : 2
L'objet de la déclaration décrit ci-dessus est en conformité avec les exigences des spécifications énumérées ci-après, suivant les conditions des directives ETRT 1999/5/CE, CEM 2004/108/EC et LVD 2006/95/EC :

EN 300-328 V1.7.1: 2006
EN 301 489-1 V1.9.2: 2012
EN 301 489-17 V2.1.1: 2009
EN60950-1:2006+A11:2009+A1:2010+A12: 2011
EN61000-3-2:2006+A1:2009+A2:2009
EN61000-3-3:2008
EN55022:2010 + AC:2011
EN55024:2010

Signé en nom et pour le compte de:
Horizon Hobby, Inc.
Champaign, IL USA
5 août 2013

Robert Peak
Chief Financial Officer
Horizon Hobby, Inc.

Déclaration de conformité
(conformément à la norme ISO/IEC 17050-1)
No. HH2013080503
Produit(s) : BLH 350 QX BNF
Numéro(s) d'article : BLH7880
Catégorie d'équipement : 1
L'objet de la déclaration décrit ci-dessus est en conformité avec les exigences des spécifications énumérées ci-après, suivant les conditions des directives ETRT 1999/5/CE, CEM 2004/108/EC et LVD 2006/95/EC :

EN 301 489-1 V1.9.2: 2012
EN 301 489-17 V2.1.1: 2009

EN61000-3-2:2006+A1:2009+A2:2009
EN61000-3-3:2008
EN60950-1:2006+A11:2009+A1:2010+A12: 2011

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Signé en nom et pour le compte de:
Horizon Hobby, Inc.
Champaign, IL USA
5 août 2013

Robert Peak
Chief Financial Officer
Horizon Hobby, Inc.

Elimination dans l'Union Européenne
Ce produit ne doit pas être éliminé avec les ordures ménagères. Il est de la responsabilité de l'utilisateur de remettre le produit à un point de collecte officiel des déchets d'équipements électriques. Cette procédure permet de garantir le respect de l'environnement et l'absence de sollicitation excessive des ressources naturelles. Elle protège de plus le bien-être de la communauté humaine. Pour plus d'informations quant aux lieux d'éliminations des déchets d'équipements électriques, vous pouvez contacter votre mairie ou le service local de traitement des ordures ménagères.

Blade 350 QX Aggiornamento Firmware 2.0 e Guida Rapida

Questo Blade 350 QX è stato aggiornato con Firmware 2.0 per un'esperienza ancora migliore. Questo foglio spiega gli aggiornamenti ed include una nuova guida rapida.

Nuova procedura di avviamento

Adesso ci sono due possibilità per avviare i motori:

Procedura originale: Mettere lo stick motore a zero, muovere lo stick del timone tutto a sinistra, poi tutto a destra e poi al centro.

Procedura nuova: Muovere entrambi gli stick negli angoli interni in basso e poi di nuovo al centro.

Nuova procedura di configurazione modalità di volo

Smart Mode (LED verde fisso = con GPS, LED verde lampeggiante = senza GPS): Relatività degli stick, funzione SAFE Circle, blocco altitudine, blocco posizione GPS, self-leveling

AP Mode (LED viola fisso = con GPS, LED viola lampeggiante = senza GPS): blocco altitudine, blocco posizione GPS, self-leveling moderato

Stability Mode (LED blu fisso = con GPS, LED blu lampeggiante = senza GPS): self-leveling, blocco posizione GPS

**Agility Mode (LED rosso):* Solo disponibile con Spektrum DX6i o trasmittenti con maggiori canali (regolazione della corsa massima servocomando necessario)

Nuova funzione di rivelazione errori bussola e GPS

L'aggiornamento Firmware 2.0 mira a prevenire che gli errori di GPS e bussola causino condizioni di volo problematiche. Il LED per l'indicazione dello stato lampeggia arancione quando la bussola nota un oggetto magnetico o metallico vicino. Quando il LED per l'indicazione dello stato lampeggia arancione, seguire le istruzioni per la calibrazione della bussola che si trovano nel manuale completo scaricabile su www.horizonhobby.com.

Nuovo caricabatteria

Questa nuova versione arriva con un nuovo caricabatteria a 12V DC che va connesso alla rete tramite un dispositivo ausiliare 12V, come quello che potete trovare nella vostra macchina. Il caricabatteria funziona proprio nella stessa maniera del caricabatteria originale, dispone però di un dispositivo per la connessione alla rete al posto dei connettori a coccodrillo.

Guida Rapida

⚠ **ATTENZIONE:** Questa guida rapida è prevista per coprire solamente le funzioni basilari del 350 QX in Smart Mode. Per una descrizione completa di funzioni, capacità e manutenzione del Blade 350 QX, si prega di consultare il manuale completo online su www.horizonhobby.com.

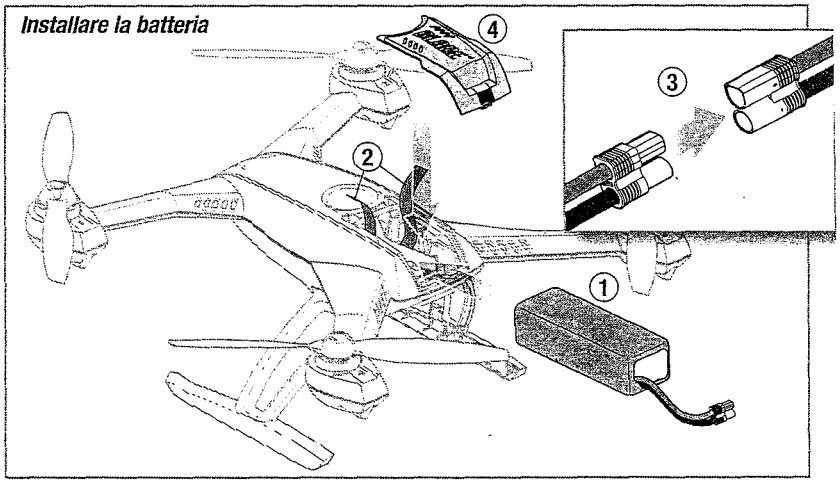
Contenuto della scatola

- Blade 350 QX Firmware 2.0
- Supporto fotocamera
- Batteria 3S 11.1V 2200mAh Li-Po
- Caricatore con bilanciamento 2–3S DC Li-Po
- Trasmettitore DX5e DSMX 5 canali (solo versione RTF)
- 4 batterie AA (solo versione RTF)

Caricare la batteria di volo

1. Connettere il caricatore ad un dispositivo ausiliare 12V DC adatto per la connessione alla rete. Si sentirà un "beep" ed il LED lampeggerà verde.
2. Spostare il selettore della corrente (A) in modo che la sua freccia indichi 2A. NON cambiare il valore della corrente quando la carica è iniziata.
3. Spostare il selettore delle celle sul numero 3.
4. Collegare il cavetto di bilanciamento della batteria alla presa di bilanciamento del caricatore adatta per le 3 celle (4 piedini), poi premere il tasto Start per iniziare la carica.
5. Il LED rosso lampeggia indicando la carica. Quando la batteria è quasi completamente carica, i LED rossi e verdi lampeggiano indicando il bilanciamento delle celle.
6. Disconnettere la batteria quando si sentirà un "beep" e il LED resterà acceso verde fisso.
7. Installare la batteria di volo (vedi l'immagine).

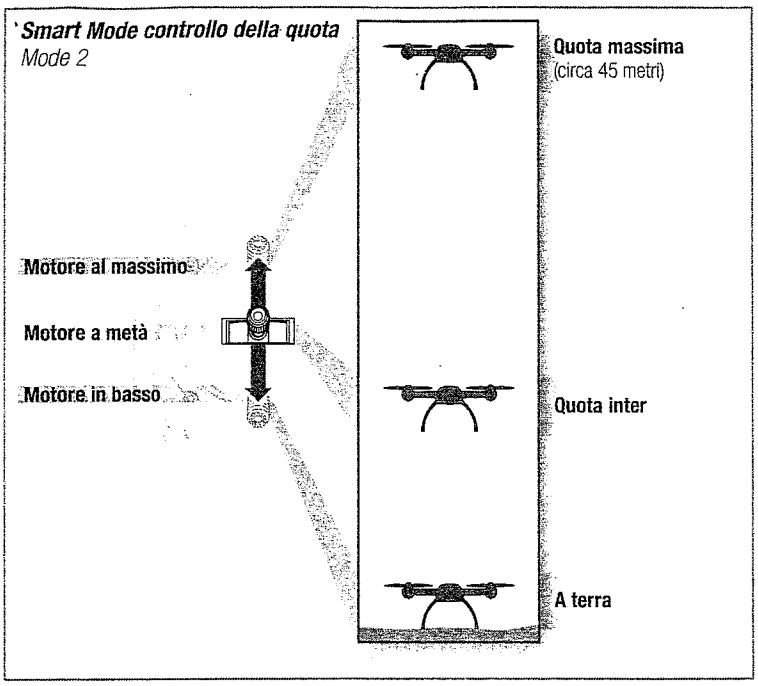
Installare la batteria

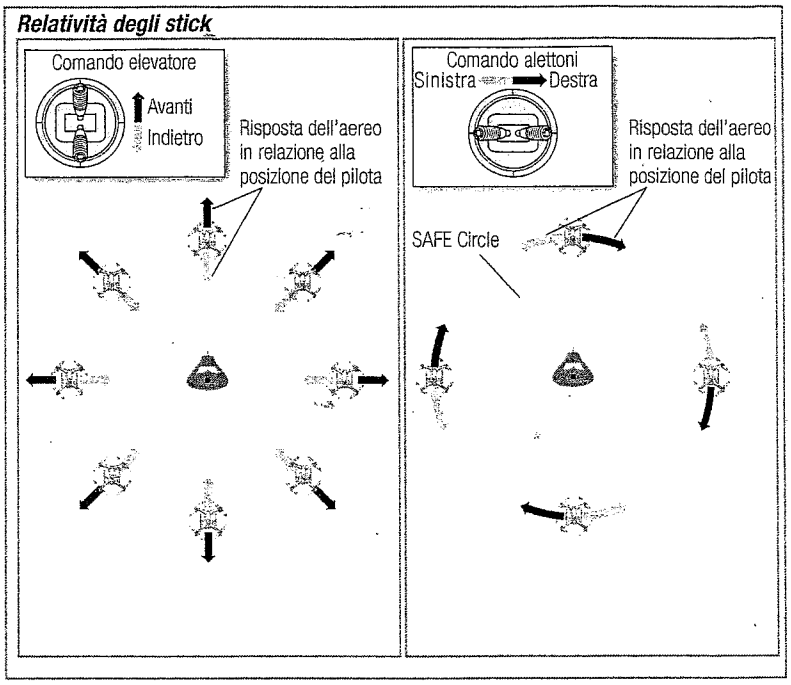


Accensione

1. Accendere il trasmettitore.
2. Mettere l'interruttore D/R in posizione Hi.
3. Spostare l'interruttore del canale 5 in posizione 0 per Smart Mode.
4. Portare completamente in basso lo stick motore.
5. Posare il 350 QX su una superficie piana all'esterno con il LED per l'indicazione dello stato puntando nella vostra direzione.
6. Accendere il 350 QX.
7. Indietreggiare per 5 metri dalla posizione base.
8. Assicurarsi che il LED per l'indicazione dello stato sia acceso verde fisso, indicando l'aggancio GPS.
9. Muovere lo stick del timone tutto a sinistra, poi tutto a destra e poi al centro per impostare la posizione base per la funzione GPS "Home" e avviare i motori.
10. Alzare lo stick motore per incominciare a volare.

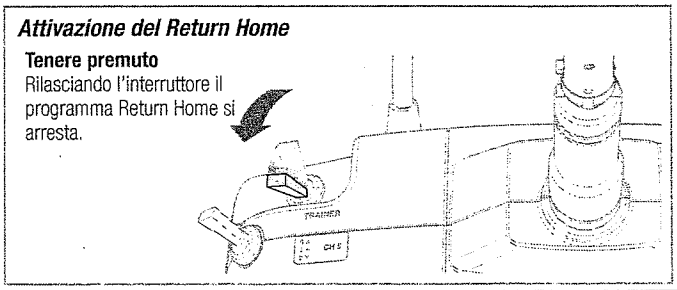
Volo





Atterraggio

1. Ci sono due opzioni per l'atterraggio:
   - Portare completamente in basso lo stick motore per atterrare e abbassare il trim motore al minimo per disarmare i motori.
   - Premere e tenere premuto l'interruttore Return Home fin quando il quadricoptero sia atterrato (vedi l'immagine).
2. Dopo l'atterraggio, spegnere il 350 QX.
3. Spegnere il trasmettitore.
4. Disconnettere la batteria di volo.



Informazioni sulla conformità per l'Unione Europea

AT	BE	BG	CZ	CY	DE	DK
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PL	PT	RO	SE	SI	SK	UK
IS	LI	NO	CH			

Dichiarazione di conformità
(in conformità con ISO/IEC 17050-1)
No. HH2013080502
Prodotto(i): BLH 350QX RTF
Numero(i) articolo: BLH7800A, BLH7800AM1
Classe dei dispositivi: 2
Gli oggetti presentati nella dichiarazione sopra citata sono conformi ai requisiti delle specifiche elencate qui di seguito, seguendo le disposizioni delle direttive europee R&TTE 1999/5/EC, CEM 2004/108/EC, e LVD 2006/95/EC:

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EN61000-3-2:2006+A1:2009+A2:2009
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EN55022:2010 + AC:2011
EN55024:2010

Firmato per conto di:
Horizon Hobby, Inc.
Champaign, IL USA
5 Ag. 2013

Robert Peak
Chief Financial Officer
Horizon Hobby, Inc.

Dichiarazione di conformità
(in conformità con ISO/IEC 17050-1)
No. HH2013080503
Prodotto(i): BLH 350QX BNF
Numero(i) articolo: BLH7880A
Classe dei dispositivi: 1
Gli oggetti presentati nella dichiarazione sopra citata sono conformi ai requisiti delle specifiche elencate qui di seguito, seguendo le disposizioni delle direttive europee R&TTE 1999/5/EC, CEM 2004/108/EC, e LVD 2006/95/EC:

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Horizon Hobby, Inc.
Champaign, IL USA
5 Ag. 2013

Robert Peak
Chief Financial Officer
Horizon Hobby, Inc.

Istruzioni del RAEE per lo smaltimento da parte di utenti dell'Unione Europea
Questo prodotto non deve essere smaltito assieme ai rifiuti domestici. Al contrario, l'utente è responsabile dello smaltimento di tali rifiuti che devono essere portati in un centro di raccolta designato per il riciclaggio di rifiuti elettrici e apparecchiature elettroniche. La raccolta differenziata e il riciclaggio di tali rifiuti provenienti da apparecchiature nel momento dello smaltimento aiuteranno a preservare le risorse naturali e garantiranno un riciclaggio adatto a proteggere il benessere dell'uomo e dell'ambiente. Per maggiori informazioni sui centri di raccolta, contattare il proprio ufficio locale, il servizio di smaltimento rifiuti o il negozio presso il quale è stato acquistato il prodotto.

APPENDIX B

USER MANUAL

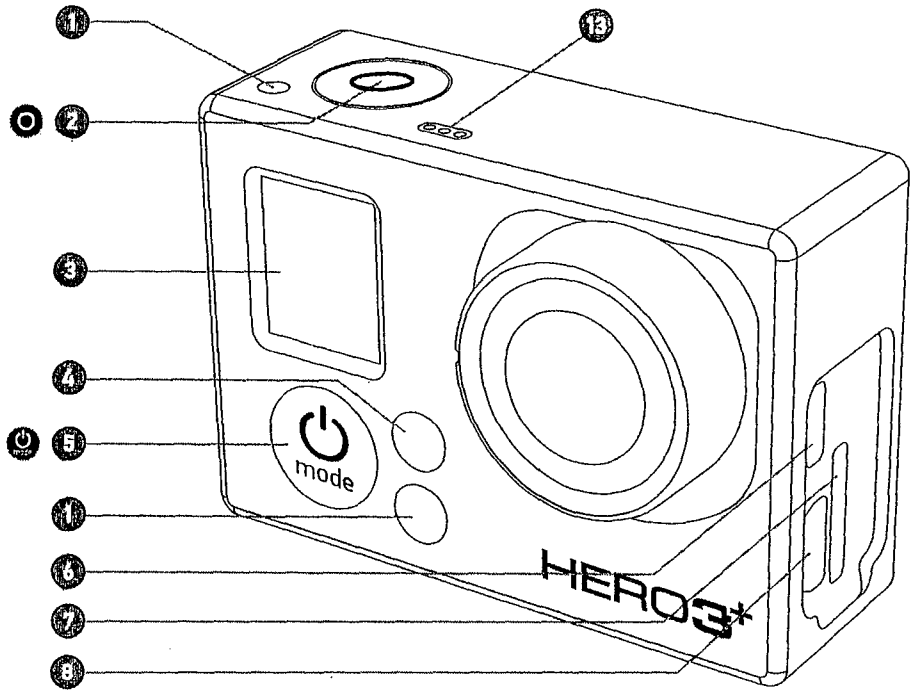
HERO3+

SILVER EDITION

GoPro

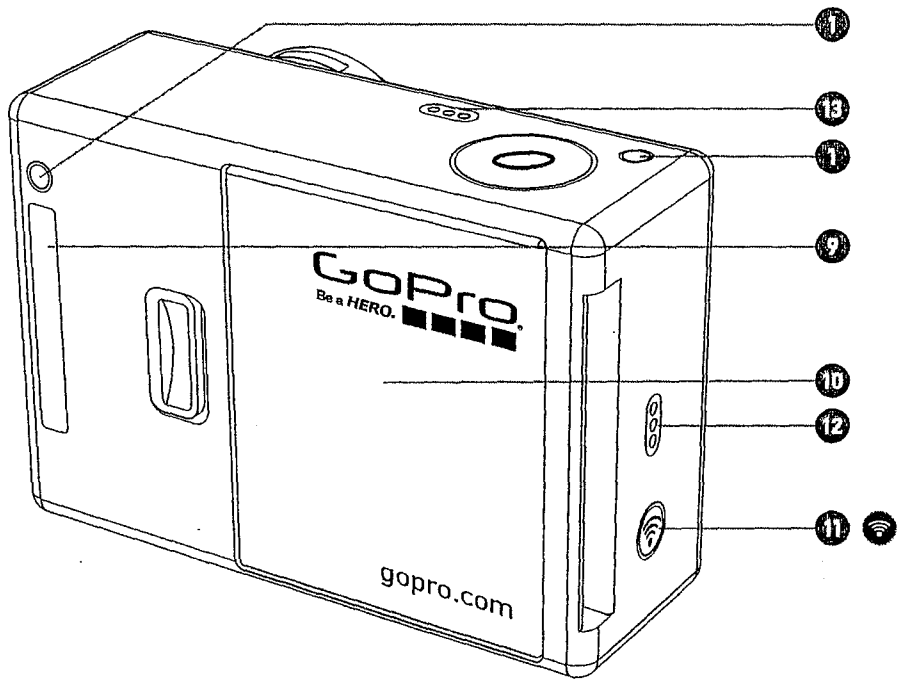
Be a HERO.

HERO3+ FEATURES



1. Camera Status Lights (Red)
2. Shutter/Select Button
3. LCD Status Screen
4. Wi-Fi Status Lights (Blue)
5. Power/Mode Button
6. Micro HDMI Port (Cable not included)
7. MicroSD Card Slot (SD card not included)
8. Mini-USB Port (Supports Composite A/C cable/3.5mm stereo mic adapter, not included)

HERO3+ FEATURES



9. HERO Port
10. Battery Door
11. Wi-Fi On/Off Button
12. Audio Alert
13. Microphone

EXIT EXIT

From the **EXIT** screen, press the **Shutter/Select Button** to exit the **Capture Settings** menu.

PRO TIP: If at anytime you wish to exit from the **CAPTURE SETTINGS MENU**, press and hold the **Shutter/Select Button** for two seconds.

SET UP

To enter the Set Up menu:

1. Verify the camera is in **Settings** mode. If the **Settings** icon on your camera's LCD screen is not showing, press the **Power/Mode Button** repeatedly until it appears.
2. Press the **Shutter/Select Button** to enter the **Settings** menu.
3. Use the **Power/Mode Button** to cycle through **Settings** to locate the **Set Up** menu SET UP.
4. Press **Shutter/Select Button** to enter **Set Up**.
5. Use the **Power/Mode Button** to locate the desired option to change.
6. Press **Shutter/Select Button** to select the desired option.
7. To exit, hold down **Shutter/Select Button** for two seconds or cycle through to EXIT and press **Shutter/Select Button** to select it.

DEFAULT MODE AT POWER UP

You can set the camera's **Default** mode of power up to any of the following modes:

- **VIDEO** (default)
- **PHOTO**
- **BURST PHOTO**
- **TIME LAPSE**

ONE BUTTON

With **One Button** mode selected, the camera automatically begins recording when powering the camera **ON**. **One Button** mode can be configured to start in **Video** or **Time Lapse**.

OFF	(Default)
ON	

To turn One Button mode ON:

1. Verify the camera is in **Settings** mode. If the **Settings** icon on your camera's LCD screen is not showing, press **Power/Mode Button** repeatedly until it appears.
2. Press the **Shutter/Select Button** to enter the **Settings** menu .
3. Use the **Power/Mode Button** to cycle through **Settings** to locate the **Set Up** menu .
4. Press **Shutter/Select Button** to enter **Set Up**.
5. Use the **Power/Mode Button** to cycle through to locate **One Button** mode .
6. Press the **Shutter/Select Button** to enter **One Button** menu.
7. Use the **Power/Mode Button** to cycle through options.
8. Press the **Shutter/Select Button** to select a highlighted option.
9. To exit, hold down the **Shutter/Select Button** for two seconds or cycle through to EXIT and press the **Shutter/Select Button** to select it.

The next time you power your camera **ON**, it will begin recording in its **Default Power Up Mode**. To stop recording, push and hold for two seconds.

ONE BUTTON MODE (continued)

To exit **One Button** mode:

1. Power camera **ON**.
2. Press and hold the **Shutter/Select Button** until (1 BUTTON) shows in the LCD window.
3. Press the **Shutter/Select Button** to enter.
4. Use the **Power/Mode Button** to highlight **OFF**.
5. Press the **Shutter/Select Button** to select it.
6. To exit, hold down the **Shutter/Select Button** for two seconds or cycle through to **EXIT** and press the **Shutter/Select Button**.

PRO TIP: To stop the capture process (**VIDEO** or **TIME LAPSE**) when in **ONE BUTTON**, press and hold the **Shutter/Select Button** for two seconds. You will return to the **ONE BUTTON** menu where you can turn **ONE BUTTON** mode **OFF**.

***NOTE: One Button** mode is disabled when connected to Wi-Fi Remote (optional accessory, sold separately) or GoPro App.*

NTSC / PAL

The **NTSC** and **PAL** settings govern **Video** recording frame rate and playback when viewing **Video** on a TV/HDTV. Select **NTSC** when viewing a TV/HDTV in North America. Select **PAL** if viewing on a PAL TV/HDTV (most televisions outside of North America) or if viewing on a PAL TV/HDTV in any region.

NTSC (Default)	**PAL**
1080p/60 fps	1080p/50 fps
1080p/30 fps	1080p/25 fps
960p/60 fps	960p/50 fps
960p/30 fps	960p/25 fps
720p/120 fps	720p/100 fps
720p/60 fps	720p/50 fps
720p/30 fps	720p/25 fps
WVGA/120 fps	WVGA/100 fps
WVGA/60 fps	WVGA/50 fps

ONSCREEN DISPLAY

To display or hide the recording icons and file information on **Video** or the viewing screen during playback, turn **Onscreen Display (OSD) OFF** or **ON**.

OFF	
ON	(Default)

LED CAMERA STATUS LIGHTS

Keep all four **Camera Status Lights** active, only two active (front and back) or turn **OFF** all lights.

4	(Default)
2	
OFF	

SOUND INDICATOR

You can adjust volume or turn **OFF** the **Sound Indicator.**

100%	(Default)
70%	
OFF	

OFF MANUAL POWER OFF

The HERO3+ can be configured to automatically power **OFF** after a specific period of inactivity (when no **Videos** or **Photos** are being taken and no buttons have been pressed).

MANUAL	(Default)
60 sec	
120 sec	
300 sec	

MONTH / DAY / YEAR / TIME

Set the HERO3+ clock to ensure **Video** and **Photo** files are saved with the correct date and time.

To change Month/Day/Year/Time:

1. Verify the camera is in **Settings** mode. If the **Settings** icon on your camera's LCD screen is not showing, press the **Power/Mode Button** repeatedly until it appears.
2. Press the **Shutter/Select Button** to enter the **Settings** menu .
3. Use the **Power/Mode Button** to cycle through **Settings** to locate the **Set Up** menu .
4. Press the **Shutter/Select Button** to enter the **Set Up** menu.
5. Use the **Power/Mode Button** to locate the **Month/Day/Year/Time** menu .
6. Press the **Shutter/Select Button** to enter **Month/Day/Year/Time** menu; **Month (MM)** will be highlighted.
7. Press the **Shutter/Select Button** to access the list of months (**1** to **12**).
8. Use the **Power/Mode Button** to cycle through list until desired selection is highlighted.
9. Press the **Shutter/Select Button** to select.
10. To advance to the next option, press the **Shutter/Select Button** .
11. Repeat steps 7, 8 and 9 to make selections for day (**DD**), year (**YY**), hour (**HH**) and minutes (**MM**).
12. To exit, hold down the **Shutter/Select Button** for two seconds or cycle through to EXIT and press the **Shutter/Select Button** .

NOTE: *If the battery is removed from the camera for an extended period of time* ***Month/Day/Year/Time*** *will need to be set again.*

EXIT EXIT

From the **EXIT** screen, press the **Shutter/Select Button** to exit the **Set Up** menu.

PRO TIP: If at anytime you wish to exit from the **SET UP** menu, press and hold the **Shutter/Select Button** for two seconds.

WIRELESS CONTROLS

The built-in **Wi-Fi** allows your HERO3+ camera to connect to the Wi-Fi Remote (optional accessory, sold separately) or to the GoPro App using a smartphone or tablet.

To turn Wi-Fi ON/OFF via the Wi-Fi On/Off Button:

Press the **Wi-Fi On/Off Button** to turn **Wi-Fi ON/OFF**. When turning **Wi-Fi ON,** the **Wi-Fi** mode will be set to the most recently used mode.

WI-FI REMOTE (SOLD SEPARATELY)

Use the Wi-Fi Remote (sold separately) to control up to 50* cameras remotely from distances of up to 600'/180m. The Wi-Fi Remote is wearable and waterproof to 10'/3m. For instructions on pairing and connecting the Wi-Fi Remote to the camera, please see the Wi-Fi Remote User Manual included with the remote.

*Actual results may vary depending on presence of wireless interference.

MAXIMIZING BATTERY LIFE

To maximize battery life, turn Wi-Fi **OFF**. To maximize battery life when shooting longer-duration activities, turn **OFF** or detach the LCD Touch BacPac™ (optional accessory, sold separately). Extreme cold temperatures may decrease battery life. To maximize battery life in cold conditions, keep camera in a warm place prior to use. Shooting with Protune mode turned **ON** will increase power consumption.

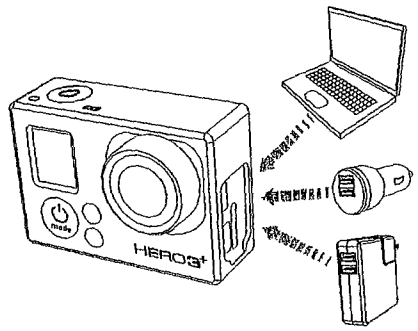
*Based on GoPro engineering testing. Actual performance may vary based on settings, environmental conditions, wireless connectivity and other factors. Maximum battery capacity will normally decrease with time and use.

CHARGING THE BATTERY

The battery icon displayed in the camera's LCD will blink when the battery drops below 10%. If recording is occurring when battery reaches 0%, the camera will save the file and power **OFF**.

To charge the battery:

1. Connect the camera to a computer or USB power supply (such as the GoPro Wall Charger or GoPro Auto Charger).
2. The red **Status Indicator Light** remains **ON** while the battery is charging.
3. The red **Status Indicator Light** will turn **OFF** when the battery is fully charged.



The battery will charge to 80% in one hour and 100% in two hours when using GoPro's 1000mAh USB-compatible Wall or Auto Charger. Other chargers may charge at a slower rate.

You can also charge the battery outside the camera using the Dual Battery Charger (optional accessory, sold separately).

No damage will occur to the camera or the battery if used prior to full charge. Spare batteries and additional charging accessories are available at: **gopro.com**.

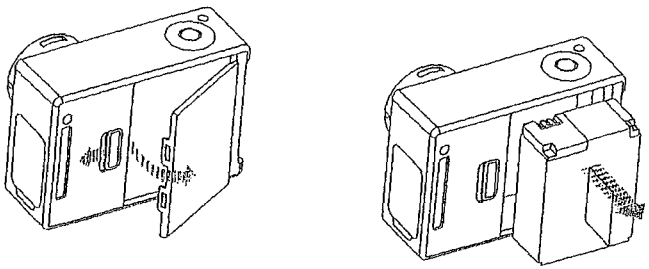
USING THE CAMERA WHILE CHARGING

You can capture **Video** and **Photos** while charging the camera's battery. Simply plug the camera into a computer, any USB charging devices, or for best results, the GoPro Auto or Wall Chargers using the included USB Cable. Performance of non-GoPro chargers cannot be guaranteed.

REMOVING THE BATTERY FROM THE CAMERA

The HERO3+ battery is designed to have a tight fit to maximize reliability in high-vibration activities.

To remove the battery:



1. Remove the battery door by placing your thumb in the indentation in the battery door (on the back of the camera) and sliding it to the left.
2. Allow the door to pop out. Grasp the battery pull-tab and remove from the camera.

MICROSD CARD MESSAGES

NO SD	No card present. The camera requires a microSD, microSDHC or microSDXC card to record **Video** or take **Photos**.
SD FULL	Card is full. Delete files or swap card.
SD ERROR	Camera unable to access card.

FILE REPAIR ICON ON THE LCD

If you see the **File Repair** icon on the LCD screen, your **Video** file was corrupted during recording. Press any button and the camera will repair the file.

TEMPERATURE WARNING ICON ON THE LCD

The **Temperature Warning** icon will appear on the LCD when the camera has become too hot and needs to cool down. Simply let it sit and cool before attempting to use it again. Your camera will not allow itself to overheat—do not worry, no damage has occurred.

APPENDIX C

PREFLIGHT INSPECTION CHECKLIST

DATE:										
A/C REG #										
PREFLIGHT AREA NOTIFICATION										
PREFLIGHT BRIEFING										
2 WAY RADIO / OPS CHECK										
PIC, VO, GRD CREW SFTY VEST										
RED SAFTY FLAGS										
SFTY BARRACADES										
GROUND STATION OPS CHK										
ALL REQUIRED PAPER WORK										
PIC FLT TIME TIMER										
AIRFRAME COND'T										
A/C BATT. #										
A/C BATT. COND'T/VOLTAGE										
PIC RADIO TRAN'S COND'T										
ALL BATTERY CONNECTORS										
LANDING GEAR										
ROTOR BLADES										
ELECTRICAL MOTORS										
TELEMTRY SYS.										
TRANSMITTER/ATTACHMENT										
CAMERA COND'T										
TT.FLT. FOR THE DAY										
POST FLT BRIEFING NOTES										
A/C DESCRP.										