ARES RECON HD

Owner's Manual

Product specifications are subject to change without notice. Due to ongoing development, the actual product may vary from images shown.

This product contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.

This product is not a toy! (14+) Recommended for ages 14 and up. Adult supervision required for ages under 18 years old. Contains small parts, keep out of reach of children 3 years of age and younger.

AZSQ3201	Recon HD
AZSQ3201M1	Recon HD Mode 1

Ensure you have the latest version of the manual by visiting our website.

Distributed in the US by:
Firelands Customer Service/Product Support
1133 Libra Drive, Lincoln, NE 68512
www.firelandsgroup.com
1-800-205-6773
customerservice@firelandsgroup.com

Distributed in Australia by:
Model Engines (Aust.) Pty. Ltd.,
P.O. BOX 828
NOBLE PARK 3174
Australia
www.modelengines.com.au
Ph (03) 8793 5555

Distributed in the UK by:
J Perkins Distribution Ltd,
Lenham, Kent, UK ME17 2DL.
www.jperkins.com

A Quality FIRELANDS Product

MADE IN CHINA

Specification

Length: 157.0mm
Width: 157.0mm
Height: 41.0mm
Weight: ..... 64.0g (RTF)
Flight Battery: ..... 1S 3.7V 25C 500mAh LiPo
Transmitter: ..... 2.4GHz with integral LCD
Transmitter Batteries: .. 4 x AA (Not Supplied)
Charger: ..... 1 x 1S USB

Contents

IMPORTANT! This radio control model is not a toy. It must be operated and flown according to these instructions and may cause serious injury to persons or damage to property if not used responsibly or if operated without due caution. Unsuitable for children under 14 years of age.

Introduction

Anyone who's flown a mini-size, camera-carrying quad will appreciate the importance of a machine that has a smooth control response while also being gyro-stable in hover mode, vibration-free, and agile enough to hold position in a wind. The Recon HD is all these things, and a whole lot more. Let your creativity run wild with its state-of-the-art, high-definition, transmitter-activated video and still camera that records onto an included 4Gb micro memory card. What's more, a USB card reader is also supplied so you can quickly and conveniently view, transfer or upload your video footage and digital images. Advanced features include a single button 360° flip function, bright LED lights on the underside (to aid orientation and make night flying a reality), and intelligent flight modes that allow you to switch from super-stable camera platform to fast and furious.

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.

The associated regulatory agencies of the following countries recognize the noted certifications for this product as authorized for sale and use: USA, UK, AU and EU

Safety Precautions

Failure to use this product in the intended manner as described in the following instructions can result in damage and / or personal injury. A Radio Controlled (RC) airplane is not a toy! If misused it can cause serious bodily harm and damage to property.

Keep items that could become entangled in the propeller(s) away from the propeller(s), including loose clothing, tools, etc. Be especially sure to keep your hands, face and other parts of your body away from the propeller(s).

As the user of this product you are solely and wholly responsible for operating it in a manner that does not endanger yourself and others or result in damage to the product or the property of others.

This model is controlled by a radio signal that is subject to possible interference from a variety of sources outside your control. This interference can cause momentary loss of control so it's advisable to always keep a safe distance from objects and people in all directions around your model as this will help to avoid collisions and / or injury.

- Never operate your model if the voltage of the batteries in the transmitter is too low.
- Always operate your model in an open area away from obstacles, people, vehicles, buildings, etc.
- Carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable batteries, etc.).
- Keep all chemicals, small parts and all electronic components out of the reach of children.
- Moisture causes damage to electronic components. Avoid water exposure to all electronic components, parts, etc. that are not specifically designed and protected for use in water.

Lawful Operation

Please note that specific guidelines exist regarding the lawful flying of 'Small Unmanned Aircraft' and 'Small Unmanned Surveillance Aircraft' such as the camera-equipped Recon. To stay within the law visit the website of your country's aviation regulating authority and read the operating guidelines within which you must operate.

USA: The Federal Aviation Administration – https://www.faa.gov

UK: The Civil Aviation Authority – https://www.caa.co.uk

Australia: The Civil Aviation Safety Authority – https://www.casa.gov.au

LiPo Battery Warnings

IMPORTANT NOTE: Lithium Polymer batteries are significantly more volatile than the alkaline, NiCd or NiMH batteries also used in RC applications. All instructions and warnings must be followed exactly to prevent property damage and / or personal injury as the mishandling of LiPo batteries can result in fire. By handling, charging or using the included LiPo battery you assume all risks associated with LiPo batteries. If you do not agree with these conditions please return the complete product in new, unused condition to the place of purchase immediately.

- You MUST charge the LiPo battery in a safe area away from flammable materials.
- NEVER, at any time, leave the LiPo battery unattended when it's being charged.
- When charging the battery you should ALWAYS remain in constant observation to monitor the charging process and react immediately to any potential problems that may occur.
- After flying / discharging the battery you must allow it to cool to ambient/ room temperature before recharging.
- To charge the LiPo battery you MUST use only the included charger. Failure to do so may result in a fire causing property damage and/or personal injury. DO NOT use a NiCd or NiMH charger.
- We recommend charging the LiPo in a proprietary, fireproof, dedicated LiPo charge bag.

If at any time during the charge or discharge process the battery begins to balloon or swell, discontinue charging or discharging immediately. Quickly and safely disconnect the battery, then place it in a safe, open area away from flammable materials to observe for at least 15 minutes. Continuing to charge or discharge a battery that has begun to balloon or swell can result in a fire. A battery that has ballooned or swollen, even a small amount, must be removed from service completely.

For best results, store the battery at room temperature – approximately 68 – 77° Fahrenheit (F) – and in a dry area.

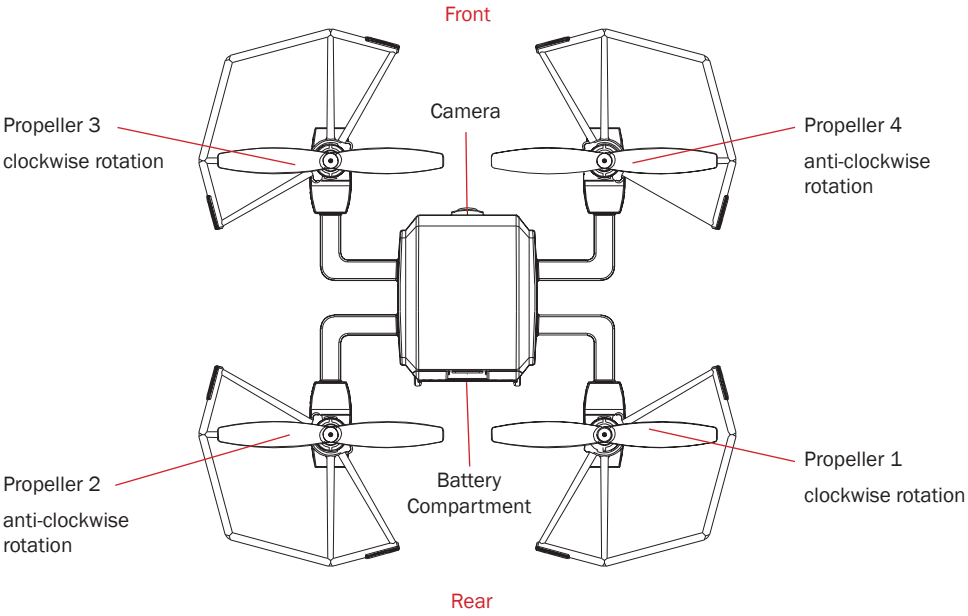
Contents

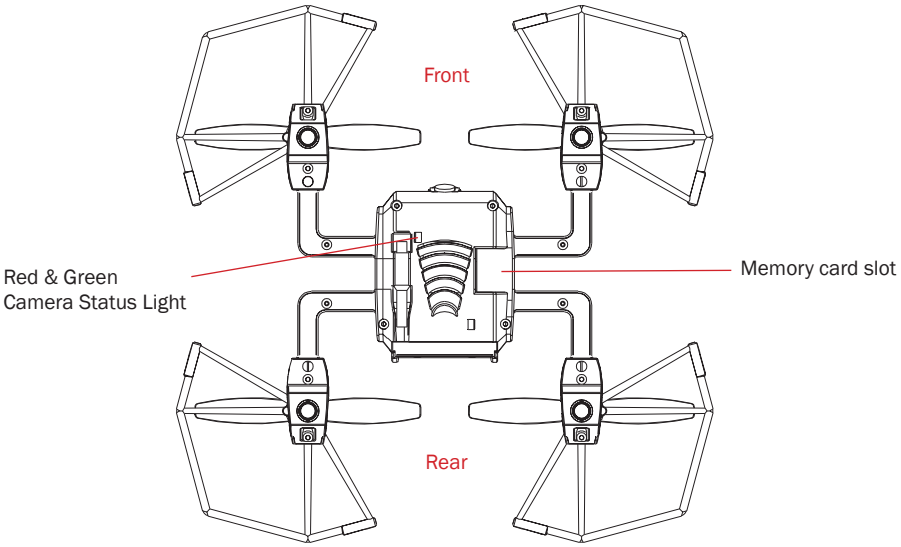
- 1 x Recon HD quadcopter with 720p HD camera
- 1 x 500mAh 1-cell 3.7V LiPo
- 1 x 2.4GHz transmitter with integral LCD
- 1 x 4GB micro memory card
- 1 x Spare propeller set
- 1 x Screwdriver
- 1 x Owner's manual
- 1 x USB card reader
- 1 x USB charger

Required to Complete

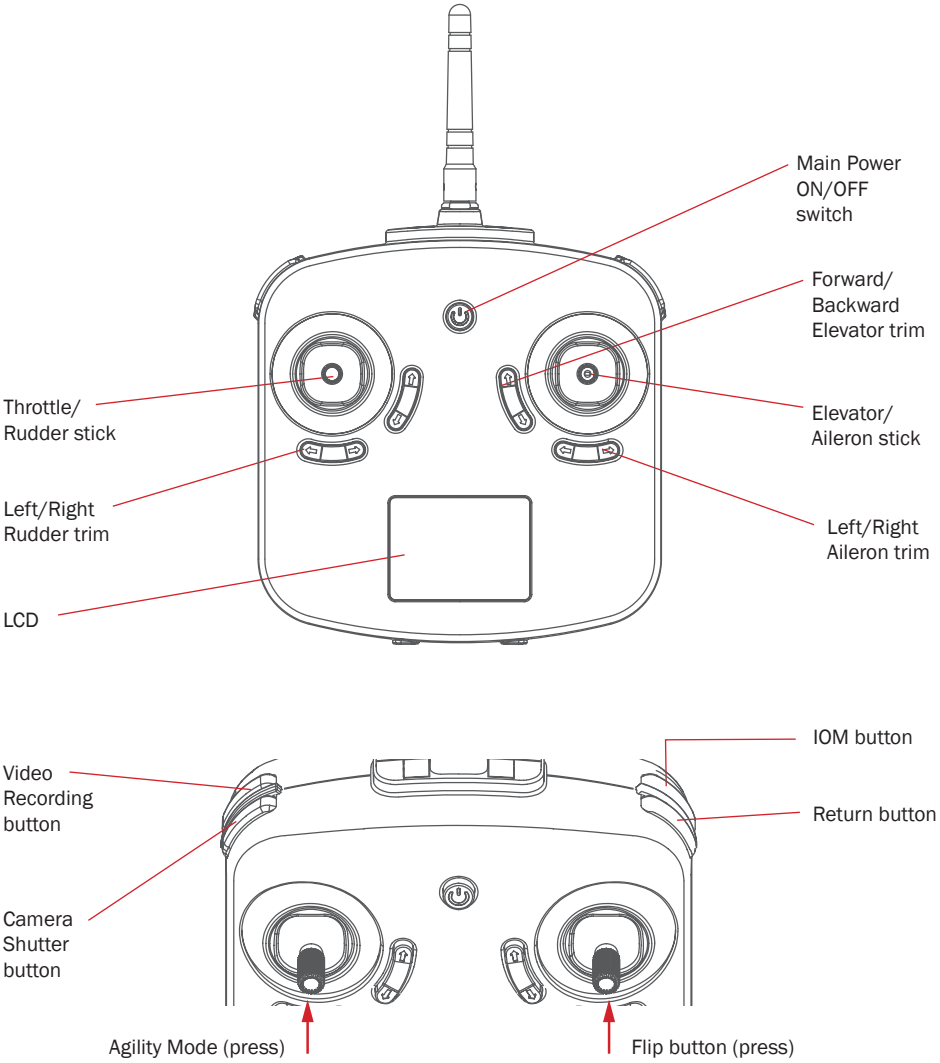
- 4 x AA Batteries for the transmitter

Quadcopter Details



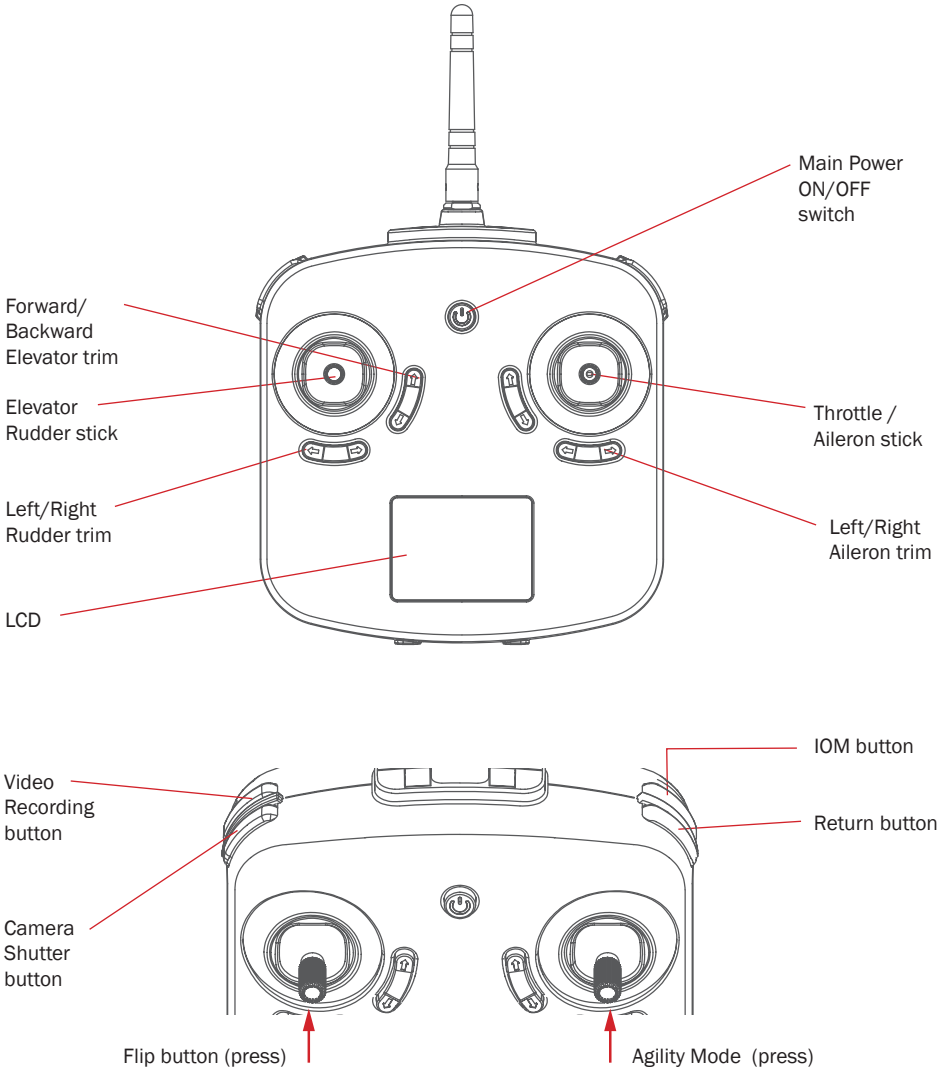


Transmitter Details (Mode 2)



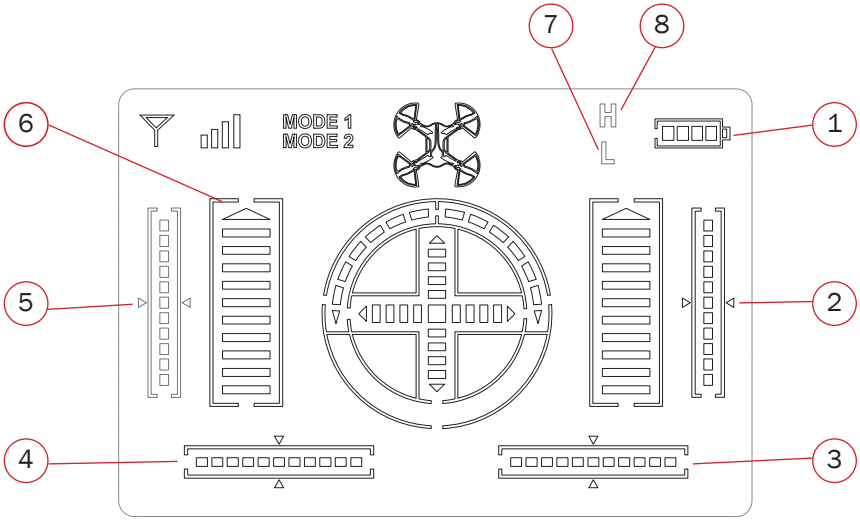
Transmitter Low voltage warning: When the transmitter batteries get low on power, three beeps will be heard. This should be taken as an indication to land (within 30 seconds) and replace the four AA pencells.

Transmitter Details (Mode 1)



Transmitter Low voltage warning: When the transmitter batteries get low on power, three beeps will be heard. This should be taken as an indication to land (within 30 seconds) and replace the four AA pencells.

LCD Screen Details

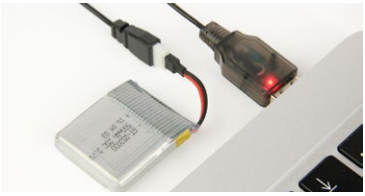


1. Tx battery level indicator
2. Digital trim indicator (Mode 1 - Throttle; Mode 2 - Elevator)
3. Digital trim indicator (Aileron)
4. Digital trim indicator (Rudder)
5. Digital trim indicator (Mode 1 - Elevator; Mode 2 - Throttle)
6. Throttle travel indicator
7. Agility Mode icon (Low & Medium)
8. Agility Mode icon (High)

Charging The Supplied LiPo Battery

Locate the USB style charger and connect it to the LiPo battery. Note the orientation of the white two-pin connector and align the slots to ensure correct polarity.

Plug the USB charger into a suitable USB port noting that the LED on the charger will glow solid red when connected. A discharged battery will be replenished in approximately 70 minutes and can be seen to be fully charged when the red LED light goes out. When this happens the battery is ready to use and can be disconnected from the charge lead.



Preparation for Flight

1. Use a Phillips screwdriver to remove the rear battery cover and insert 4 x AA pencells noting the correct orientation / polarity of each cell. Replace the battery cover and tighten the screw.

2. Open the rear battery cover of the quadcopter and insert the LiPo into the fuselage. Connect the LiPo's two pin plug to the socket of the quadcopter making sure to align the slots for correct polarity. Tuck the lead neatly behind the LiPo and close the battery cover.

3. When the battery is connected the LED lights will flash. Place the Recon on a level surface to enable the on-board gyro to be properly calibrated.
4. With the throttle in the low position, Switch the transmitter ON by pressing the power button. The quad's LEDs will now stop flashing and emit a solid light indicating that the Recon and the transmitter are paired.
5. Arm the motors by pushing the throttle stick forward to its stop (Pic A), then back to its lowest point (Pic B). Your Recon HD is now ready to fly. Before taking off move the quadcopter to a clear / open space that's free of people, animals and obstacles, then stand clear yourself. Position the quad with the battery cover facing you and the camera facing away. If you've never flown an R/C quadcopter before, read the section entitled 'Flying Your Recon HD'.

A

(Mode 2 Transmitter Shown)

B

(Mode 2 Transmitter Shown)

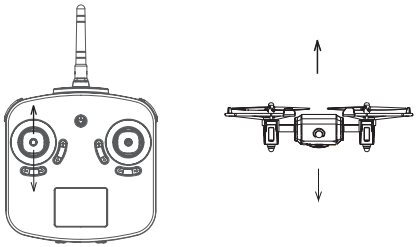
Flying Your Recon HD

Where quadcopter flying is concerned it's not possible to have too much space. As such, we recommend that you fly your Recon in a large enough area to ensure that control is relaxed and you have time to think. If flying outside we also recommend that early flights be carried out in calm conditions.

If you're new to R/C quadcopters set the Agility Mode to 'Low' before flying and take things gently to give yourself time to get familiar with the sensitivity of the controls. R/C flying is a skill that requires practice to master, so be prepared to undertake many flights before you get proficient. The following is a list of the controls you have at your disposal. Make sure you familiarize yourself with their effect on the quadcopter before you fly it.

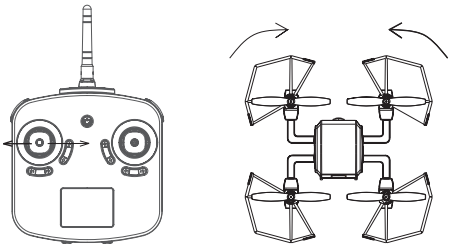
1. **Ascend and descend.** Gently push the throttle stick forward to ascend and backward to descend.

   (Mode 2 Transmitter Shown)



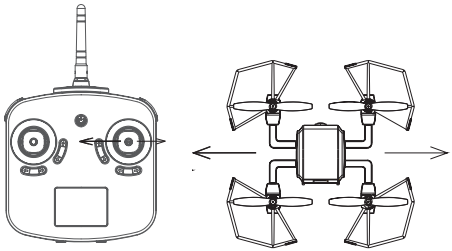
2. **Yaw.** With the Recon in a stable hover, gently move the rudder stick to the left to yaw (rotate) the quad in an anticlockwise direction. Move the rudder stick to the right to yaw the quad in a clockwise direction.

   (Mode 2 Transmitter Shown)



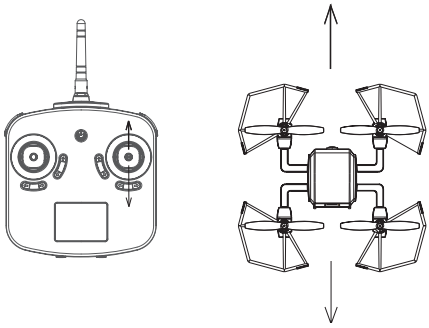
3. **Roll.** With the Recon in a stable hover, gently move the aileron stick to the left make the Recon move sideways to the left. Move the aileron stick to the right to make the Recon move sideways to the right.

   (Mode 2 Transmitter Shown)



4. **Pitch.** With the Recon in a stable hover, gently push the elevator stick forward to move the quad forward. Gently pull the elevator stick backward to move the quad backward.

   (Mode 2 Transmitter Shown)



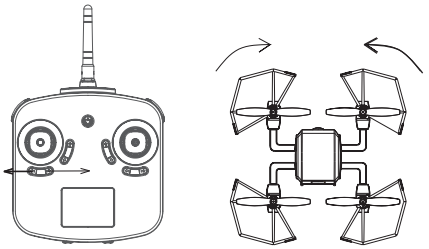
Note: with a charged battery the Recon will fly for approx 5.5 minutes. At the end of your flight low battery power will be indicated when the Recon's LED lights begin to flash. When this happens you should land within 30 seconds and recharge the LiPo.

Trimming

In order to maintain a suitably stable hover you may find it necessary to trim the model to correct any flight path deviation. This is done using the transmitter's trim buttons.

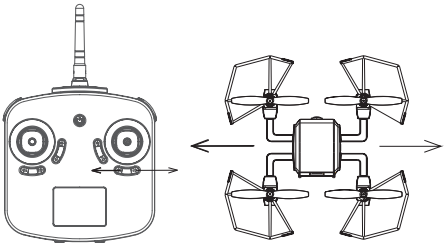
1. **Deviation in yaw.** If the Recon displays a natural tendency to rotate clockwise, use the rudder trim to correct this by pressing the left side of the button. If the Recon displays a natural tendency to rotate anticlockwise, use the rudder trim to correct this by pressing the right side of the button.

   (Mode 2 Transmitter Shown)



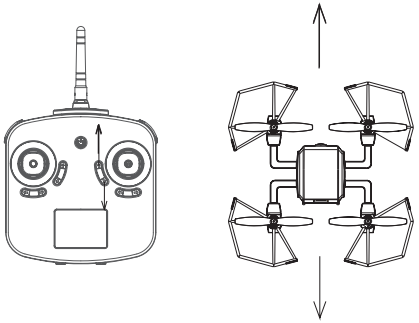
2. **Deviation in roll.** If the Recon displays a natural tendency to move sideways to the left, use the aileron trim to correct this by pressing the right side of the button. If the Recon displays a natural tendency to move sideways to the right, use the aileron trim to correct this by pressing the left side of the button.

   (Mode 2 Transmitter Shown)



3. **Deviation in pitch.** If the Recon displays a natural tendency to move forward, use the elevator trim to correct this by pressing the bottom of the button. If the Recon displays a natural tendency to move backward, use the elevator trim to correct this by pressing the top of the button.

   (Mode 2 Transmitter Shown)



Note: The trim buttons offer 30 steps, each step indicated by a short beep and trim center indicated by a prolonged beep.

Agility Mode

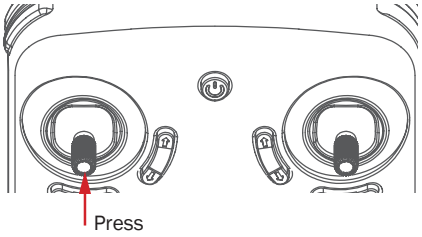
Agility mode allows you to tailor the performance of your Recon to suit your experience. Three settings are available:

Low - for beginners.

Medium - for those with some quad flying experience.

High - for experienced quad pilots.

To cycle through the settings press the left-hand stick. A single audible beep indicates that Low agility has been selected, two beeps indicates that Medium agility is selected and three beeps indicates High agility mode.



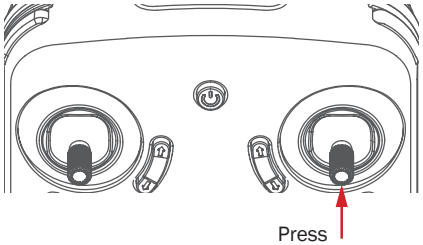
(Mode 2 Transmitter Shown)

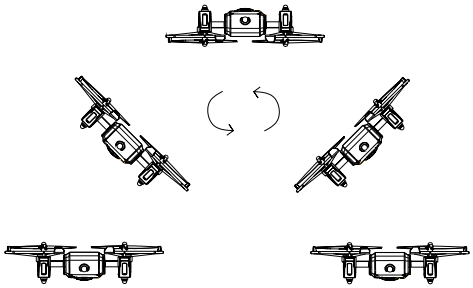
Flip Mode

Your Recon HD is equipped with a 360° flip function that works in both the pitch and roll axes. To activate Flip mode press the right-hand stick. Continuous beeps will be heard to confirm that the Flip function is active and ready for your command. At this point simply move the aileron or elevator stick to its furthest point of travel and release. The Recon will perform a 360° flip in the direction of the stick movement whereupon the flip function will be cancelled so that normal flight can resume. Be aware that additional flying space will be required when performing flips so make sure to practice these with plenty of space.

Note: The flip function can be cancelled at any time by pressing the right-hand stick once more.

(Mode 2 Transmitter Shown)





Intelligent Orientation Mode

Your Recon HD is equipped with IOM functionality that locks the aileron and elevator commands to a specific compass bearing no matter which direction the front of the quadcopter is facing. IOM is perfect for creative video making as it allows you to disengage the yaw (camera pan) function from the other primary controls to make combined flying and filming much easier. To activate IOM:

1. Position the quadcopter directly in front of you with the camera facing forward (i.e. in the direction you wish IOM to use).
2. Without moving the quad, prepare it for flight by connecting the battery and arming the motors.
3. Press the IOM button on the transmitter – a single beep will be heard and the quad's lights will flash to confirm that IOM is active. Note: the lights will now continue to flash until the IOM function is switched off.
4. To test the IOM function, lift the quad into a stable hover with the camera facing forward. The quad should respond as normal, i.e. if you push the elevator stick forward the quad will fly forward, if you pull the stick back it will fly back. Left aileron stick will move it to the left and right aileron stick will move it to the right. However, if you now yaw the quadcopter 45° to the left and repeat the process, forward elevator stick will still make it fly away from you, whist pulling back on the elevator stick will bring it back towards you. Left aileron will continue to move it to the left and right aileron will continue to move it to the right.
5. Press the IOM button once more to switch the function off and return to normal flight. With IOM switched off the LED lights will stop flashing and light solid.

If your Recon was facing North when IOM was activated this compass bearing will be stored and reactivated whenever the IOM button is pressed. To alter the heading the IOM function must be recalibrated as below:

1. Prepare your Recon HD for flight and arm the motors.
2. Position the quadcopter directly in front of you with the camera facing forward.
3. Pull both transmitter sticks as far back as they will go then place the left-hand stick in the bottom right-hand corner of the gimbal and the right-hand transmitter stick in the bottom left-hand corner of the gimbal.
4. The Recon's LED lights will flash four times to confirm that re-calibration has been successful.

One Button Return

If, in flight, you get confused about the orientation of your Recon it can be made to fly itself back in the direction of the initial gyro calibration / take-off point simply by pressing the Return button. Note that the quadcopter will only return in the general direction of the calibration / take-off point and is not programmed to return to the actual take-off point.

Note: The Recon will continue flying in that same direction until the Return command is cancelled. This can be done either by interrupting its flight with the aileron / elevator command, or by pressing the Return button once again.

Operating the Video & Stills Camera

1. Prepare your Recon HD for flight but do not arm the motors at this stage.
2. The Recon HD carries a micro memory card (supplied) that can be used to store video footage and still camera images. Ensure the memory card is correctly orientated then insert it into the slot on the underside of the quadcopter by pushing it gently until it clicks home. When the card is correctly inserted the green status light will be illuminated.
3. Place your Recon HD on a level surface and arm the motors ready for flight.
4. To record a still image press the camera button. Note that the red status light will temporarily illuminate to confirm that an image has been taken. One photo will be taken each time the button is pressed.
5. To record video footage press the video camera button. The red status light will illuminate to confirm that recording is in progress. To stop recording, press the video camera button once more and note that the red status light will turn off to confirm that the camera is in standby mode.

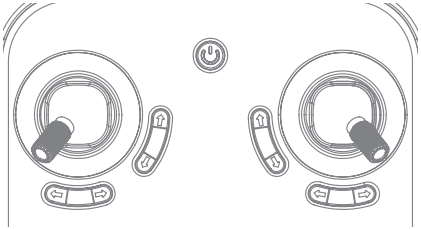
Viewing Photo & Video Recordings

To view the video footage you've shot and the photos you've taken, remove the micro memory card from the quadcopter by gently pressing it until it clicks and pops out. Insert the supplied USB card reader into your computer then slot the micro memory card into the USB card reader. You can now access and edit the video (.AVI) and photo (.JPG) files in the usual way.

Gyro Calibration

If at any point you wish to recalibrate your Recon's gyros to re-establish stable flight and correct any control malfunction – following a crash, for example – you can do this in the following way:

1. Open the rear battery cover of the quadcopter and insert the larger Quad LiPo into the fuselage. Connect the LiPo's two pin plug to the socket of the quadcopter making sure to align the slots for correct polarity. Tuck the lead neatly behind the LiPo and close the battery cover.
2. When the battery is connected the LED lights will flash. Place the Recon on a level surface to enable the on-board gyro to be properly calibrated.
3. Switch the transmitter ON by pressing the power button. The quad's LEDs will stop flashing and emit a solid light indicating that the Recon and the transmitter are paired. DO NOT arm the throttle at this stage.
4. To re-calibrate the gyros, place the left-hand transmitter stick into the bottom left corner of the gimbal and the right-hand transmitter stick into the bottom right-hand corner of the gimbal. The quad's LED lights will flash once more then emit a solid light, indicating that the calibration process is complete.
5. You can now arm the throttle by pushing the throttle stick forward to its stop, then back to its lowest point.



Propeller Identification

If at any point you damage one of your Recon's propellers it's imperative that the replacement prop is matched with the correct motor, as shown in the Quadcopter Details section on page 8 of this instruction manual. The identification numbers of the propellers can be found on the underside near the center (root section) of the blade. Note that since the blades are a simple push fit on the motor shafts, a gentle tug will easily remove them.

Problem	Diagnosis	Cure
The quadcopter lights continue to flash when the transmitter is turned on and the quad will not operate.	1. The quad has failed to pair with the transmitter. 2. The quad has insufficient battery power.	1. See the section headed 'Preparation For Flight' and follow steps 2 - 5. 2. Fully charge the LiPo battery.
The propellers turn but the quadcopter will not take off.	1. The quad has insufficient battery power. 2. One or more propeller blades are damaged or deformed. 3. Propellers incorrectly located	1. Fully charge the LiPo battery. 2. Replace the damaged / deformed propellers. 3. Check and reposition as shown on page 8.
The quadcopter shakes in flight.	1. One or more propeller blades are damaged or deformed.	1. Replace the damaged / deformed propellers.
The quadcopter is unstable in flight and difficult to trim.	1. One or more propeller blades are damaged or deformed. 2. One or more of the motors is faulty.	1. Replace the damaged / deformed propellers. 2. Replace the faulty motor(s).
The quadcopter is uncontrollable following a collision.	1. The gyro may have lost its settings.	1. Follow the Gyro Calibration procedure detailed on page 19.

Replacement Parts

AZSQ3203 .....Propeller set (red / black)
AZSQ3205 .....Body shell (red / black)
AZSQ3207 .....Propeller guard set (red / black)
AZSQ3209 .....CCW motor
AZSQ3210 .....CW motor
AZSQ3211 .....LED (red)
AZSQ3212 .....LED (white)
AZSQ3213 .....1S 3.7V 500mAh Quad LiPo
AZSQ3214 .....Receiver
AZSQ3216 .....Landing pad set
AZSQ3217.....Battery hatch and tray
AZSQ3218 .....1S 3.7V USB LiPo charger
AZSQ3219 .....Micro memory card, 4GB
AZSQ3220 .....USB micro memory card reader
AZSQ3223 .....720p camera
AZSQ3224 .....Motor sleeve
AZSQ3225 .....1S 3.7V USB LiPo charger
AZSQ3226 .....Transmitter with LCD

Warranty, support and service (UK)

This product is covered by the current statutory guarantee regulations. If you wish to make a warranty claim, please contact the model shop where you originally purchased the product from. You should also present your proof of purchase.

- The guarantee does not cover faults or damage caused by:
- Incorrect handling or operation
- The use of incompatible accessories
- Modification or unauthorised repairs
- Accidental or deliberate damage
- Normal wear and tear
- Using the product outside of its stated specification

Firelands Group LLC accepts no liability for loss, damage or costs which are incurred due to the incorrect or incompetent use of the product.

CE Conformity Declaration

This device has been tested in accordance with the relevant harmonised European directives. This product's design fulfils the protective aims of the European Community relating to the safe operation of this equipment.
For a copy of the Declaration of Conformity, please visit:
www.ares-rc.com/support

Disposal

Electrical equipment marked with the crossed out wheelie bin symbol must not be disposed of in household waste, but must be taken to a specialist disposal or recycling system. In EU member countries, electrical equipment must not be discarded via the normal domestic refuse channels (WEEE - Waste Electrical and Electronic Equipment Directive 2002/96/EG). You should take unwanted electrical equipment to your nearest local authority waste collection point or recycling centre.

Distributed in the UK by:

J Perkins Distribution Ltd,
Lenham,
Kent,
UK
ME17 2DL.
www.jperkins.com

Warranty, support and service (USA)

30-Day Limited Warranty Term Period:

We warranty that the Product(s) purchased (the 'Product') will be free from defects in materials and workmanship when the product is new (before being used) for the limited warranty term period, 30 days, from the date of purchase by the Purchaser.

If you believe a defect in material, workmanship, etc. was not apparent when the Product was new and only became evident after the Product was used, take the following steps:

If you purchased the Product at a HobbyTown store, please contact your local HobbyTown store for warranty support and/or service.

If you purchased the Product from the Firelands website, use the contact information found under the Support heading to contact Firelands directly.

If you contact Firelands, you may be asked to send the product to Firelands, at your cost, for inspection. Provided the warranty conditions have been met within the warranty term period, the components that are found to be defective, incorrectly manufactured or assembled may be repaired or replaced, at the sole discretion of Firelands. Your warranty item will be returned to you at Firelands' expense. In the event your product needs repair or a replacement part that is not covered by this warranty, your local HobbyTown store or Firelands can assist you with support and in obtaining the genuine replacement parts to repair your Product. Firelands will charge $40.00 per hour plus the cost of replacement parts to service your vehicle if after contacting you, you so authorize such repairs. Your product will be returned to you at your expense.

If you purchased your Product from a HobbyTown Internet site not affiliated with a local store, please consult that site for its support and service policies. You can also find more information at:

www.Hobbytown.com

by emailing customerservice@firelandsgroup.com

or by calling 800-205-6773

Warranty, Support & Service AU

30 Day Warranty

Model Engines (Aust.) Pty. Ltd. warrants this product to be free from defects in materials or workmanship for 30 days from the date of purchase and will repair, replace or refund the purchase should the product prove to be defective.

This warranty does not apply to any unit or system or component which has been dropped, damaged in a crash, improperly installed, assembled, handled or abused.

Model Engines (Aust.) Pty. Ltd. reserves the right to void the warranty if the product has been altered or modified, has had a foreign part added, has been misused or not used for the purpose for which it was designed, has been used near or in salt water, has been water damaged, or if the damage has been caused by the customer's use of the product.

Under no circumstances does Model Engines (Aust.) Pty. Ltd. warrant nor will the customer be entitled to consequential or incidental damages. Model Engines (Aust.) Pty. Ltd. assumes no responsibility for any other damage, inconvenience or other claims whatsoever.

Lodging A Claim

To lodge a claim, present the goods to your place of purchase (retailer where you bought the product) with your original purchase receipt and a written explanation of the defect.

The place of purchase (retailer where you bought the product) will then contact Model Engines (Aust.) Pty. Ltd. for a Return Authority number and will return the item for warranty assessment to Model Engines (Aust.) Pty. Ltd. Items delivered to Model Engines (Aust.) Pty. Ltd. for warranty assessment without a Return Authority number will be returned to sender.

The warranty process may take up to 14 business days from the date of receipt. Model Engines (Aust.) Pty. Ltd. must assess each item and if warranty applies must repair or replace the item at its discretion and return it to the place of purchase (retailer where you bought the product).

Goods presented for warranty may be replaced by refurbished goods of the same type rather than being repaired. Refurbished parts may be used to repair the goods.

If the product is proven to be defective the cost and expenses relating to the delivery of the goods to Model Engines (Aust.) Pty. Ltd. will be borne by Model Engines (Aust.) Pty. Ltd.

The benefits of this warranty are in addition to other rights and remedies of the customer under any law to which this warranty relates.

Our goods come with guarantees that cannot be excluded under the Australian consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the

goods fail to be of acceptable quality and the failure does not amount to a major failure.

Model Engines (Aust.) Pty. Ltd.,

P.O. BOX 828

NOBLE PARK 3174

Australia

www.modelengines.com.au
Ph (03) 8793 5555
warranties@modelengines.com.au

This warranty information relates to goods supplied on a wholesale basis by Model Engines (Aust.) Pty. Ltd. to Australian Retailers. The warranty complies with Australian regulatory requirements and supersedes all warranty information from the original manufacturer.

ARES

www. Ares-RC.com

FIRELANDS

REV- 001