

INSTRUCTION MANUAL





Electrical and electronic equipment that are supplied with batteries (including internal batteries)

WEEE Directive & Product Disposal

At the end of its serviceable life, this product should not be treated as household or general waste. It should be handed over to the applicable collection point for the recycling of electrical and electronic equipment, or returned to the supplier for disposal.

Internal / Supplied Batteries.

This symbol on the battery indicates that the battery is to be collected separately.

This battery is designed for separate collection at an appropriate collection point.

H107D SPARE PART CHART



H107D-A01 Body Shell



H107-A02 Props



H107-A23 Motor



H107D-A03 X4 RX



H107-A24 Battery



H107-A06 USB Charger



H107-A07 Screw Set



H107D-A05 Transmitter



H107D-A02 Rubber feet



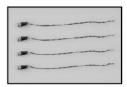
H107-A11 Uwrench



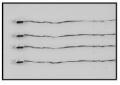
H107C-A20 M8 Protection Cover



H107-A13 T-Shirt



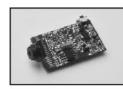
H107-A32 Blue LED



H107C-A33 Red LED



H107D-A04 Camera module 0.3 pixel



H107C-a34 HD Camera PCB module 2.0 pixel

1 INTRODUCTION

Thank you for buying HUBSAN products. The quadcopter is designed as an easy to use, full featured RC model capable of hovering, fast forward, and aerobatic flight maneuvers. Please read the manual carefully and follow all instructions in this. Be sure to retain the manual for future reference, routine maintenance, and tuning.

1.1 Important Notes

This RC quadcopter is not a toy, it utilizes various high-techs to provide superior performance.

Please read this manual carefully before operating this product. Any improper use of this product will result in serious injury. Be aware of your personal safety, safety of others and your surrounding environment.

We recommend that you obtain the assistance of an experienced pilot before attempting to fly our product for the first time.

2 SAFETY NOTES

2.1 Caution

R/C quadcopter have parts that move at high speed, thus posing a certain degree of danger. Pilots are responsible for any actions resulting in damage or injury from the improper operation of their R/C aircraft models.

Choose a wide open space without obstacles. Do not operate R/C aircraft near buildings, crowds of people, high voltage cables, or trees to ensure the safety of yourself, others and your model.

Operate this unit within your ability. Do not fly when tired or after drinking or when impaired by medication. Improper operation may cause damage to people and property.

2.2 LiPo Battery Recharging

Your quadcopter is powered by a Lithium-Polymer (LiPo) battery.

Never recharge your battery whilst it is inserted in your model. It can catch fire leading to the total destruction of the item.

If you do not plan to fly your model for a week or more, store the battery approximately 50% charged to maintain battery performance and life. To achieve a 50% charge, fly the model until the battery requires recharging. Charge the battery for half the time typically required to fully charge the battery.

H107D-01

H107D-01 4*AA rechargeable NI-MH battery(1800mAh)



SAFETY ADVISORY NOTICE

[Lithium-Polymer (LiPo) Batteries]

LiPo batteries are differ from conventional batteries in that their chemical contents are encased in a relatively insubstantial foil packaging. This has the advantage of significantly reducing their weight, but does make them more susceptible to damage if roughly or inappropriately handled. As with all batteries, there is a risk of fire or explosion if safety practices are ignored:

- Charge and store LiPo batteries in a location where a battery fire or explosion (including smoke hazard) will not endanger life or property.
- ☑ Keep LiPo batteries away from children and animals.
- ☑ Consider how you would deal with a LiPo battery fire/explosion as part of your normal home Fire Safety & Evacuation Planning.
- Never charge the LiPo battery that has ballooned or swelled due to over-/under-charging or from a crash.
- Never charge the LiPo battery that has been punctured or damaged in a crash (After a crash, inspect the battery pack for the sign of damage. Discard in accordance with your country's recycling laws.).
- ☑ Never charge the LiPo battery in a moving vehicle.
- Never over charge the LiPo battery.
- Never leave the LiPo battery unattended during recharging.
- Do not charge LiPo batteries near flammable materials or liquids.
- ☑ Ensure that charging leads are connected correctly. Reverse polarity charging can lead to battery damage or a fire or explosion.
- ☑ Have a suitable fire extinguisher(electrical type) OR a large bucket of dry sand near the charging area. Do not try to extinguish electrical (LiPo) battery fires with water.
- Reduce risks from fire/explosion by storing and charging LiPo batteries inside a suitable container: a LiPo Sack or metal/ceramic container is advised.
- ☑ Monitor recharging LiPo batteries for signs of overheating.
- ☑ Protect your LiPo battery from accidental damage during storage and transportation. (Do not put battery packs in pockets or bags where they can short circuit or can come into contact with sharp or metallic objects.).
- ☑ If your LiPo battery is subjected to a shock (such as a helicopter crash) you should place it in a metal container and observe for signs of swelling or heating for at least 30 minutes.
- ☑ Do not attempt to disassemble or modify or repair the LiPo battery.

16: The LCD screen is not viewable outdoors with bright sunshine.

Answer: Check the packaging inside the box, there is an anti-glare sticker, it will help you to reduce glare in full sunshine. Peel the protective membrane and put it onto the screen.

17: The video is not being saved to the SD card.

Answer: Always stop the video recording function and power off the battery first, after that you can take out the SD card.

Always turn off the power to the TX before inserting or removing the SD card. This allows the memory to be properly saved to the SD card.

18: How to recover the factory set.

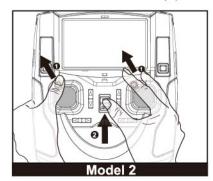
Answer:

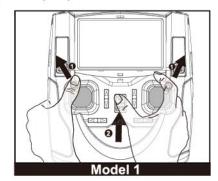
(MODE 1 transmitter)

Push the left joystick to the top on the left, and the right joystick to the top on the right, keep them in this position and then turn on the transmitter, the LCD screen will show "CALIBERATE STICK", Move the joysticks in a circling motion about 3 times, and then release the joystick and press "any" key 1s to save and exist.

(MODE 2 transmitter)

Push the two joysticks to the top on the left and keep them in this position, and then turn on the transmitter, the LCD screen will show "CALIBERATE STICK", Move the joysticks in a circling motion about 3 times, and then release the joystick and press "any" key 1s to save and exist.





19: The transmitter will not power on.

Answer:

Check the battery connection.

If the transmitter battery power is low, you will need to replace with new AA batteries .

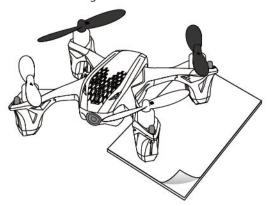
13. One or more motors stop working

Answer: (1) Motor is damaged. Replace the motor.

- (2) The motor connections(s) are disconnected. Resolder.
- (3) An FET on the flight controller looks burned. Replace the flight controller.

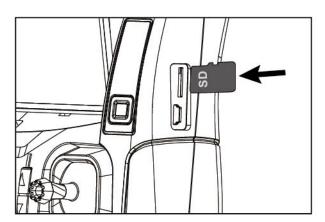
14. The X4 is still drifting excessively when hovering even after a good accelerometer calibration.

Answer: Set it on a level surface and shim the side that it drifts to with a few sheets of paper (the number of sheets will vary depending on the amount of drift), so it can calibrate the accelerometers with a level offset angle.



15. The Camera can't record

Answer: Press the button and the camera will recording, when the recoding is finished please press the button again to save it. If you don't want to save it please power off the Quadcopter. Please check the battery in both TX and X4, when the battery is low, it can't record.



2.3 Prevent Moisture

R/C models are composed of many precision electrical components.

Store the battery and model in a dry area at room temperature. Exposure to water or moisture may cause the model to malfunction resulting in loss of responsiveness, or a crash.

2.4 Proper Operation

For the safety purpose, please only use hubsan's spare parts for replacement.

2.5 Always Be Aware Of The Rotating Blades

When in operation, the main and tail rotor blades will be spinning at high speed. The blades are capable of inflicting serious body injury and damage to the environment.

Be cautious of your actions and careful to keep your body and loose clothing away from the blades. Never take your eyes off the model or leave it unattended while it is turned on. Stop operation immediately if the model flies out of your view. Once landed, immediately turn off the model and transmitter.

2.6 Avoid Flying Alone

Beginners should avoid flying alone whilst learning flight skills. It is advised that an experienced pilot be in nearby guidance.

3 SAFETY CHECK BEFORE FLYING

CAREFULLY INSPECT THE X4 BEFORE EVERY FLIGHT

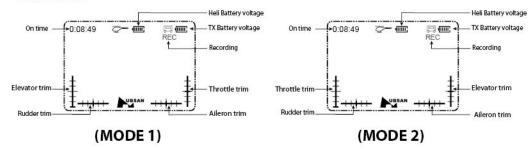
- Before operation, please check the batteries of the transmitter and receiver are charged enough for the flight.
- Before turning on the transmitter, please check that the throttle stick is in the full down position.
- Carefully check rotor blades and rotor holders. Broken or premature failure of parts will result in a dangerous situation.
- Check the battery and power plug are securely fastened. Vibration and violent flight may lead the plug to loose and result in loss of control.
- When turning on the unit, please follow the power on/off procedure: for Power ON-please turn on the transmitter first, and then turn on the receiver. For Power OFF- please turn off the receiver first and then turn off the transmitter. Improper procedure may cause loss of control of the quadcopter .

H₁₀₇ FAQ

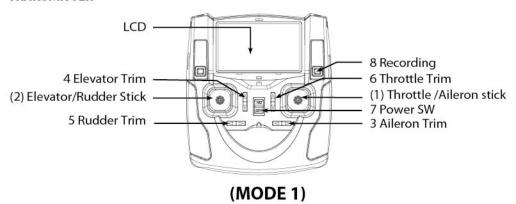
4 TRANSMITTER

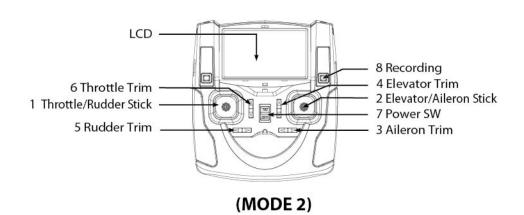
4.1 Identification and functions of the Main Menu

Main Menu



TRANSMITTER

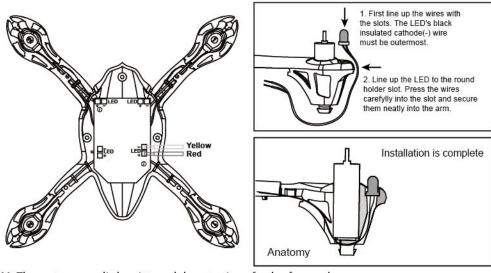




10. LED removal & installation.

Removal: Unscrew and remove the lower shell and the rubber feet. Then unsolder the red and yellow wires.

Installation: Solder the red wire on anode/positive (+), the yellow on cathode/negative (-), press the LED wires first, then the motor wires in the leg slots. Install the lower shell, then the rubber feet. You can determine the color of the LED lights by looking at the color of the LED wire insulation at the bottom of the LED lens: white color is white light, blue color is blue light.

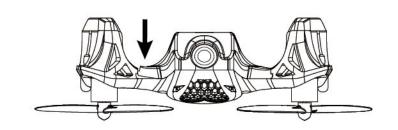


11. The motors are a little gritty and do not spin as freely after crashes.

Answer: You can hear grinding and see that motor is not spinning freely by flicking the prop. Press the shaft down from the top of the prop and motor to fix the problem, or replace the motor.

12. The arm of the X4 separates after a hard landing or crash.

Answer: This is a special design to absorb the impact from hard crashes. Simply force the arms to snap back into the joint position by hand as shown in the picture.



H107D FAQ

1.Transmitter and X4 will not bind.

Answer: Throttle position needs to be fully minimized. Please do not move the transmitter sticks or trims during initial power-on binding.

2. Transmitter LED light on and then suddenly off.

Answer: Replace new AA batteries

 $3.\,LCD\ transmitter\ not\ showing\ the\ setting\ interface\ after\ hold\ down\ the\ joystick\ for\ 1\ second.$

Answer: The throttle stick is not in the lowest position.

4The quality of the video is not good, and it makes breaks.

Answer: Please use brand HD SDHC card, such as Kingston Micro SDHC class6 4G card.

5. Gyro not working well

Answer: (1) Battery voltage too low. (2) Re-bind (3) Land on to the ground with the throttle fully minimized for 3 seconds and take off again.

6. Unable to Flip

Answer: (1) Press the Elevator stick one time to enter into the expert(flip) mode. (2) In the expert(flip) mode, the sensitivity on each channel should be above 90%, you can program the sensitivity in the setup menu. Please check manual 4.4 Stick Sensitivity Adjustment. (3) Press the throttle stick to turn off anti-flip. (4) Lipo power is too low and needs to be recharged.

7. Quadcopter is shaking or oscillating with noise.

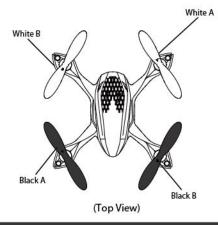
Answer: Please check to see that the motors, canopy, body and props are all properly positioned.

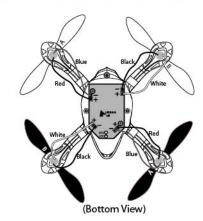
8. Switching between low and high rates on the transmitter not very user-friendly.

Answer: Press the Elevator stick briefly only one time to switch on/off the expert mode(red flashing TX LED) and normal mode(green solid LED). The word "Expert" will also appear at the bottom center on the LCD.

9. Can not take off.

Answer: (1) Wrong installation of the props. Props are marked with "A"(CW) and "B"(CCW). Please check the pictures below for the correct order. (2) Wrong installation of motors. Please check to make sure that each motor is installed in its correct position. There are two different types of motors with different motor wire colors. Please check the pictures below for the correct order.





Input Key Function

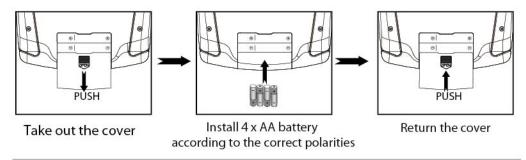
S/N	Identification	Function
1	MODE 2 Throttle/Rudder Stick	Forward and backward movement of the stick makes the quadcopter ascend and descend respectively. Left and right movement of the stick will rotate the quadcopter's fuselage left/right respectively.
2	MODE 2 Elevator/Aileron Stick	Forward and backward movement of the stick makes the quadcopter move forward and backward respectively. Left and right movement of the stick makes the quadcopter drift sideways left/right respectively.
(1)	MODE 1 Throttle /Aileron stick	Forward and backward movement of the stick will make the quadcopter increase or decrease speed respectively. Left and right movement of the stick makes the quadcopter roll left/right to initiate a banked turn.
(2)	MODE 1 Elevator/Rudder Stick	Forward and backward movement of the stick makes the quadcopter nose point up/down respectively. Left and right movement of the stick makes the quadcopter yaw left/right respectively.
3	Aileron Trim	Aileron trim adjusts for left and right drift.
4	Elevator Trim	Elevator trim adjusts for forward and backward drift.
5	Rudder Trim	Rudder trim adjusts for drift of left and right rotation or yaw.
6	Throttle Trim	Throttle trim normally left at neutral. The lower trim turns LEDs on and off.
7	Power SW	Pushing the switch up turns on the transmitter. Pushing it down turns it off.
8	Recording	The new model can support for vedio recording. Press the Recording button for 1 second to confirm or exit.

4.2 Battery Mounting

Notice: >Do not mix old and new batteries

- >Do not mix different types of batteries
- >Do not charge non-rechargeable battery.
- >Only 4XAA type battery, other's will broke transmitter

Exploding View



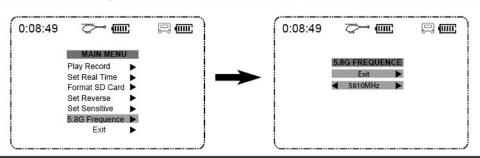
Notice:

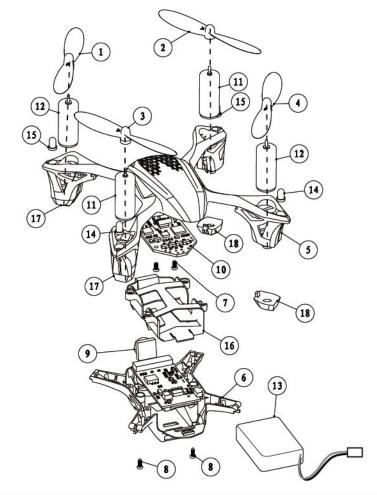
- 1. The video will stop when the TX battery is low, and it can't recording either.
- 2. When the SD card is full, it can't recording and the screen will display "SD Full".
- 3. It is better to use 4G+, and class 4+ SD Card.
- 4. When power on the TX, the red LED will blink quickly, the LCD screen is black, which indicates the battery is low, you can not bind the TX and X4. Please change new batteries in the TX.
- 5. When flying the X4, the red LED on the TX blinks quickly, LCD screen turns black, which indicates the TX battery is low, it can still control the quad, so please manage to land the quad and change new batteries in the TX.
- 6. The TX can only use 4*AA dry battery or Ni-MH AA battery, other battery will damage the TX.

4.3 Frequency selectable 5.8Ghz

Your transmitter will automatically find the best frequency to ensure the quality live video transmission. in case there is any interference in your location, you can change the setting from the range 5.725 to 5.945 Ghz to get longer range and better video transmission.

Press down ELEVATOR stick for 1 second to enter setting status, move the stick up/down to choose **5.8G FREQUENCE**, push the ELEVATOR stick to right and move the stick up/down to select the frequency set, set what frequency you need by push the stick left/right, exit this set as the displayed arrow show. Hold down the ELEVATOR stick for 2 seconds to exit.

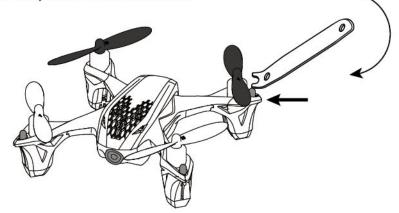




No	PART NAME	QTY
1	White blade B	1
2	White blade A	1
3	Black blade A	1
4	Blackblade B	1
5	Upper shell	1
6	Lower shell	1
7	Screw	2
8	Screw	2
9	Camera PCB module	1

No	PART NAME	QTY
10	FPV RX	1
11	820 motor(clockwise)	2
12	820 motor(anticlockwise)	2
13	Li-po battery	1
14	LED-2	2
15	LED-1	2
16	Battery box	1
17	Rubber feet-1	2
18	Rubber feet-2	2

Removing Props: Hold the prop, insert the U wrench under the prop, press down and the prop will easily come off the motor shaft.

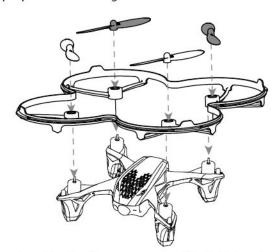


The propellors are dangerous when the quadcopter is flying. To avoid injury or damage, please consider installing the protection cover.

Instructions:

Remove the props. Position the cover's four holes with the motors. Press each of them on the motors, then re-install the props in their correct positions on the X4.

When removing the protection cover, please remove the props first as in the above steps, and pinch off the protection cover from each motor. After any crash landing, please check to make sure the protection cover is still on tight, and make sure the body, motors and props are not damaged.

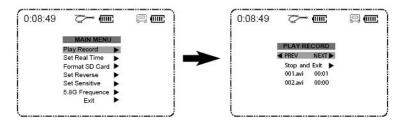


* The above U-wrench and protection cover are not included and must be ordered.

4.4 Play Record

Your transmitter can play the record that you saved.

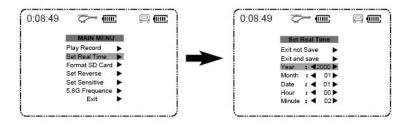
Press down ELEVATOR stick for 1 second to enter setting status, move the stick up/down to choose **PLAY RECORD**, push the ELEVATOR stick to right, push right/left to choose NEXT/STOP. Hold down the ELEVATOR stick for 2 seconds to exit.



4.5 Set Real Time

Your transmitter can set real time as computer, once you set the time it can display the real time in your time zone.

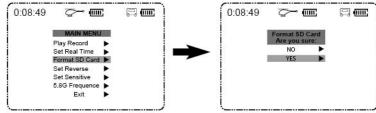
Press down ELEVATOR stick for 1 second to enter setting status, move the stick up/down to choose **SET REAL TIME**, push the ELEVATOR stick to right, move it up/down to choose and push right/left to set the time. After finshiing the set, choose to exit by pushing the ELEVATOR stick to left. Hold down the ELEVATOR stick for 2 seconds to exit.



4.6 Format SD Card

The SD card is in the transmitter. Your transmitter can format SD card.

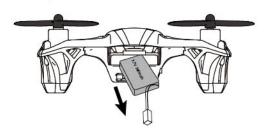
Press down ELEVATOR stick for 1 second to enter setting status, move the stick up/down to choose **FORMAT SD CARD**, push the ELEVATOR stick to right, move it up/down to choose and push right to confirm or exit. Hold down the ELEVATOR stick for 2 seconds to exit.



5 LI-PO BATTERY CHARGING

5.1 The quadcopter equipped with a 3.7V 380mAh Lipo battery

5.1.1 Take out the battery from bottom of the X4



5.1.2 Connect the battery with USB charger, the LED light is ON whilst charging and turns OFF when charging complete. The USB charger can connect to any smartphone charger except lphone, also can connect to the USB socket in cars. The voltage of the USB is $+5\pm0.5$ V.



5.2 Please refer to 2.2. Safety Advisory Notice

Always partially charge your LiPo battery before storage. LiPo batteries retain the power over a reasonable period; It is not normally necessary to recharge stored LiPo batteries unless stored for periods longer than 3-6 months.

If your LiPo battery has been over-discharged, it will not be possible to recharge it again.



LiPo Battery Disposal & Re-Cycling



Lithium-Polymer (LiPo) batteries must not be placed in with household refuse. Please contact your Local Authority (Council) or the supplier of your model for local regulations and the location of your nearest LiPo battery recycling centre.

TEMPORARY STORAGE of DAMAGED LiPo BATTERIES:

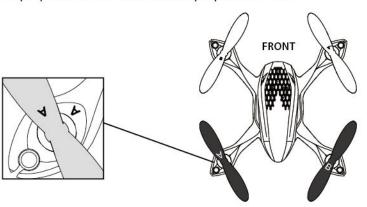
Bury the LiPo battery in a bucket of <u>dry</u> sand or (if discharged) the battery may be neutralized by immersion in a salt water bath.

If in doubt: always seek expert advice!

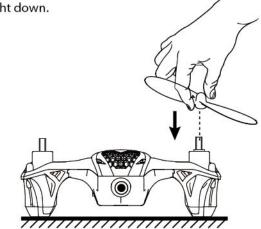
In Expert Mode, the X4 can fly at high speeds and do flips. if you don't need it to flip, you can select anti-flip mode. Press the throttle stick to select or deselect anti-flip. OFF=one TX beep=it can't flip. ON=two TX beeps=It can do flips. Note that when the X4 runs out of lipo power, it also can't flip.

9 PROPELLER INSTALLATION AND REMOVAL

The X4's props are not identical. Each prop is labeled with an A or B. When installing replacement props, be certain to install them as shown. The X4 will not fly, and will flip and crash if the props are not installed in their proper locations.



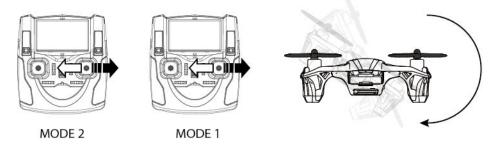
Installation: Pinch the prop hub, line up the hole to the motor shaft, press it firmly but gently straight down.



8 • THE HUBSAN X4 THE HUBSAN X4 • 17

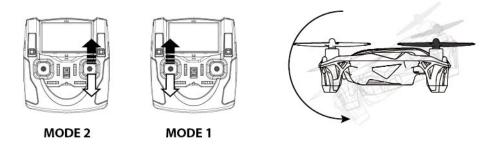
8.3.2 Right side flip

Push the joystick to the full left side and then quickly push the joystick to full right and release the stick to the center after the flip.



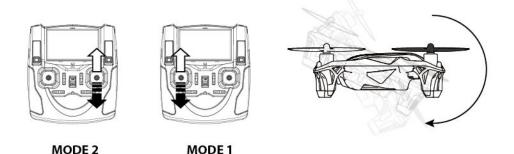
8.3.3 Forward flip

Pull the joystick to the back and then quickly push the joystick to the front and release the stick to the center after the flip.



8.3.4 Backward flip

Push the joystick to the front and then quickly pull the joystick to the back and release the stick to the center after the flip.



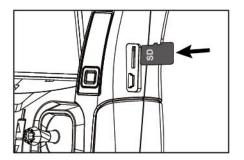
6 VIDEO RECORDING

Note:

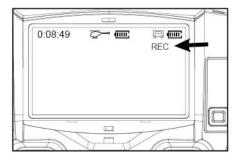
Always turn OFF the power of the transmitter before inserting or removing the SD card. Always stop the video recording function and power off the battery firstly, and then you can take out the SD card.

6.1 Insert the SD card

Note: Avoid removing the SD card and re-inserting again too quickly otherwise the recording module will not work properly



6.2 The screen will display REC in red and blinking when recording is started.(See the right picture)



6.3 Start/Stop recording using the remote



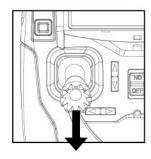
7 START TO FLY

7.1 Power-On (Failsafe) Procedure

Your X4's flight contoller is coded with a Power-On failsafe.

This is designed to ensure that the X4's motor will not start unless it detects a suitable radio-control signal when the LiPo battery is connected. The correct Start-Up sequence is as follows:

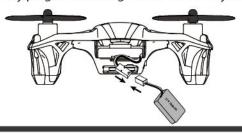
7.1.1 Make sure the throttle stick is in the full down position.



7.1.2 Power on the transmitter and the red LED will be blinking. Please do not move any other stick or trim before the TX and X4 match code and bind, or the X4 will drift. The TX LED will turn green when the TX binds with the X4.

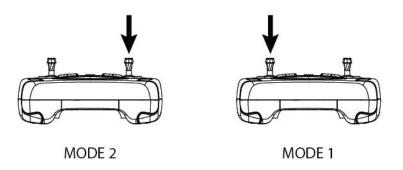


7.1.3 Apply power on the X4 by connecting the battery plug with correct polarity. Please disconnect the X4 battery plug after turning off the TX when you stop flying.



8.3 Aerial Flip Tips.

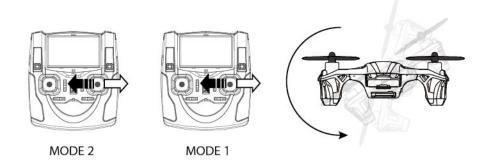
The flip maneuver will only work in the the EXPERT MODE when anti-flip is not selected. You need to press the elevator stick one time to switch into the expert mode. To select anti-flip momentarily press the throttle stick in: anti-flip=one beep. flip=two beeps.



Your X4 can do 360° flips by pushing the joysticks as described below. For proper flip execution, make certain that the X4 is close to level, within a 30° angle with the ground, and add some climb throttle before you move the pitch and roll sticks.

8.3.1 Left side flip

Push the joystick to the right side and then quickly push the joystick to the left and then release the stick to the center position after the flip.

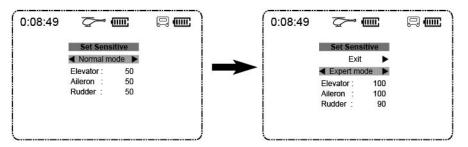


10•THE HUBSAN X4

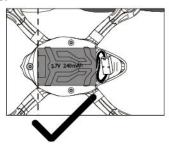
◆ EXPERT MODE

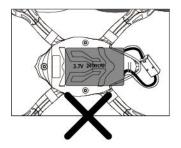
In expert mode, the sensitivity can be adjusted even further (up to 100) to give the user even more ability to manoeuver the aircraft. Follow instructions below to switch this on/off.

Press down ELEVATOR stick for 1 second to enter setting status, move the stick up/down to choose **SET SENSITIVE**, push the ELEVATOR stick to right, choose NORMAL MODE, push the ELEVATOR stick to right to enter into the expert mode, press the elevator/ aileron/ rudder trim to set the sensitive. Push the ELEVATOR stick to left to exit this set. Hold down the ELEVATOR stick for 2 seconds to exit.



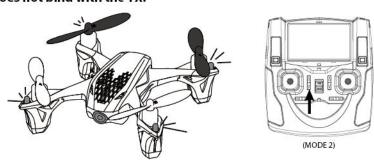
7.1.4 Insert the battery to the bottom of your X4. Make sure the battery and wires are pushed into the end of the battery compartment, so they will not negatively affect the center of gravity(COG) and cause unstable flight. Please twist the wires and squeeze them into the notched holder as the picture shows, to prevent inflight shaking or oscillations.





7.1.5 About LED lights:

After a "beep", and the red LED on the transmitter turns green, the 6 lights on the X4 will be on solid indicating that the bind code is matched. The LEDs will be on and night flying is possible. Press the lower throttle trim for about 1 second to turn the LEDs on or off. Even if you select the LEDs off, they will blink when the lipo power is low. **NOTE: The LEDs will blink when the quadcopter runs out of power or the X4 code does not bind with the TX.**



Tip: You do not need to adjust the rudder trim if the X4 keeps yawing left or right during flight. The X4 will find the rudder central point automatically in 3 seconds after the quadcopter lands with throttle full down on a level ground.



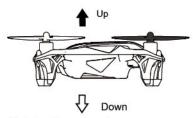
Landing on a level ground

7.2 Transmitter sticks and X4 control responses

CAUTION: To avoid loss of control: ALWAYS move the TX sticks S-L-O-W-L-Y! Be aware that control inputs will reduce available lift. Be ready to use a little extra throttle to maintain height during maneuvers.



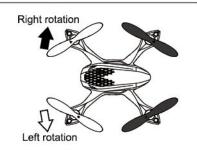




Throttle (Collective Power) increases/decreases the Flying Height of your quadcopter







Rudder (Collective Torque Yaw) rotates your quadcopter's fuselage Left / Right







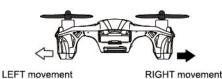
MODE 2

Elevator (Cyclic Pitch) moves your guadcopter Forwards/Backwards





MODE 1



CAUTION: Controls will appear reversed when the model is flying towards you!

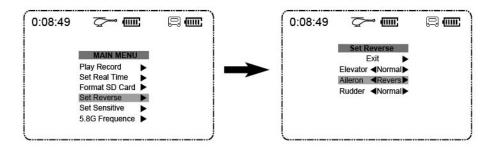
Aileron (Cyclic Roll) moves your quadcopter 'sideways' Left/Right

8 ADVANCED PERFORMANCE SETUP

8.1 Reversing channel setup

If you would like to reverse any of the stick functions due to personal preference then follow the instructions below. Be aware that this will change the controls back to front.

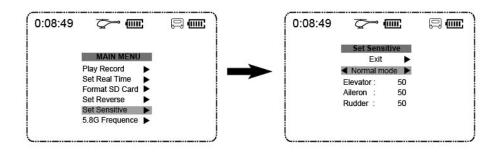
Press down ELEVATOR stick for 1 second to enter setting status, move the stick up/down to choose **SET REVERSE**, push the ELEVATOR stick to right, move it up/down to choose and push right to confirm or exit. Hold down the ELEVATOR stick for 2 seconds to exit.



8.2 SENSITIVITY SET UP

If you would like to change the sensitivity of any of the stick functions then follow instructions below. A higher sensitivity will enable larger/faster movement of the aircraft, while a lower sensivity will enable smaller/slower movement.

Press down ELEVATOR stick for 1 second to enter setting status, move the stick up/down to choose SET SENSITIVE, push the ELEVATOR stick to right, press the elevator/aileron/rudder trim to set the sensitive. Push the elevator stick to left to exit this set. Hold down the ELEVATOR stick for 2 seconds to exit.



MODE 2