Ages 14+

READ THE INSTRUCTION MANUAL CAREFULLY

PLEASE VISIT WWW.HUBSAN.COM FOR UPGRADE.

THE HUBSAN FPV X4 DESIRE

ITEM NO: H502S

Hubsan FPV X4 Desire

V1.0 2015.01

Please read the instruction manual carefully!

IMPORTANT SAFETY NOTES

OPERATION:

Be extremely careful and responsible when using the drone. Small electronic components can be damaged by crashing or by dropping the X4 into water. To avoid further damages, please replace the broken spare parts in time.

Flight:

- Take responsiblity for the safety to yourself and others when fly the X4 !
- Do not fly the X4 in crowded places. It needs enough space to operate.
- Do not fly in bad weather.
- Never try to catch the X4 while it is in flight.
- This model is intended for experienced pilots age 14+.
- Power off the X4 after flight to prevent the propellers from causing injuries.
- Always remove the battery after you stop flying to avoid injuries from accidentally powering on the motors.
- Always take great caution to protect yourself when nearing the propellers. The flight system will start after power on regardless of the transmitter signal. The high speed propellers are very dangerous.
- Power off the X4 after every flight, otherwise the propellers may still rotate and cause injury.

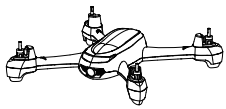
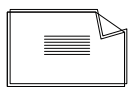
INTRODUCTION

Thank you for buying the HUBSAN product. It is designed as an easy-to-use, multi-functional RC model, capable of hovering, fast forward and aerobatic flight maneuvers. Please read the manual carefully and follow all the instructions. Be sure to keep the manual for future reference.

FPV: First Person View Function enables you to experience every live moment of the flight from the drone's view.

1. ITEMS INCLUDED IN THE BOX

Check all the items in the box before use.

S/N	Part Name	Photos	Q'ty	Remarks
1	Quad copter		1PC	Equipped with smart flight controller,GPS and compass
2	Propellers		8PCS	Propeller A 4pcs, Propeller B 4pcs
3	Transmitter		1PC	FPV Transmitter, equipped with 4 X AA battery (Not included)
4	7.4V LiPo battery		1PC	For quad copter
5	USB Charger		1PC	For Li-Po battery charging
6	Screw-driver		1PC	For removing propellers
7	User Manual		2PCS	Disclaimer Hubsan X4 Instruction Manual

2. QUAD COPTER MOTOR LED INDICATOR

Indicator Status:

Front LED: in blue; Back LED: in red.

1. Power on: 4 LED indicators blink simultaneously every 1.5 seconds.

2. GPS Flight: 4 LED indicators keep lighting.

3. GPS Return : 2 front LED keep lighting, and 2 back LED explosion-flashing every 2 seconds.

4. Headless Flight: 2 front LED explosion-flashing every 2 seconds., and 2 back LED keep lighting.

5. Low Power Return: 2 front LED keep lighting, and 2 back LED explosion-flashing every 5 seconds.

6. Photo: 2 front LED keep lighting, 2 back LED blink once.

7. Video: 2 front LED keep lighting, 2 back LED blink alternately.

8 . LED indicators can be turned off when taking pictures and videos.

3. QUAD COPTER BATTERY

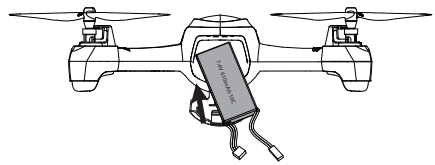
3.1 INTRODUCTION

The quad copter battery is a rechargeable lipo battery with 610mAh capacity and 7.4V voltage. The battery should only be charged with the HUBSAN charger.

⚠ Please make sure the battery being fully charged before the first time use.

3.2 INSTALL THE BATTERY

Push the battery into the battery compartment correctly and connect the battery plugs in correct polarity. Close the battery compartment cover.

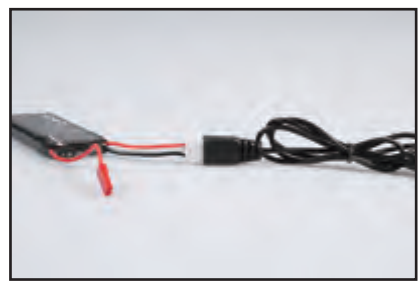


3.3 CHARGING

Connect the battery to the USB charger, then connect the USB charger to the USB devices, such as computer or mobile power.

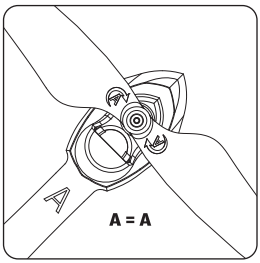
It takes around 40 to 50 minutes to fully charge the battery by 500mA current. The USB

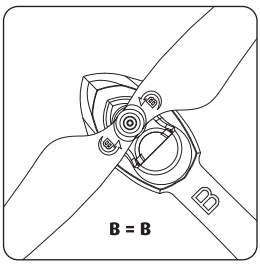
LED indicator is in red when charging and will lights off when the battery is fully charged. Please unplug the charger and battery when the charging is completed.

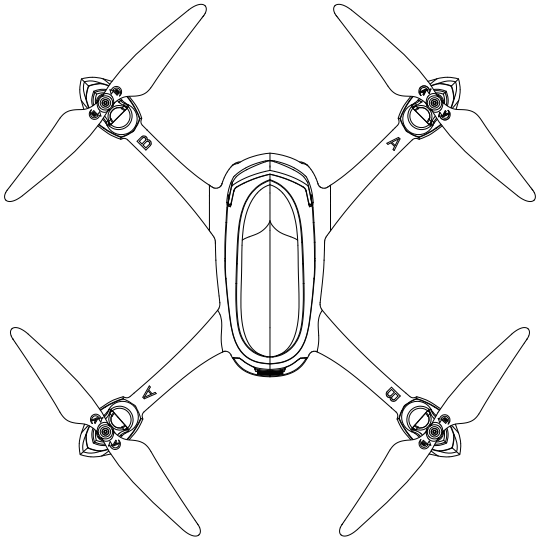


⚠ Please fully charge the batteries to avoid disconnection due to the low voltage.

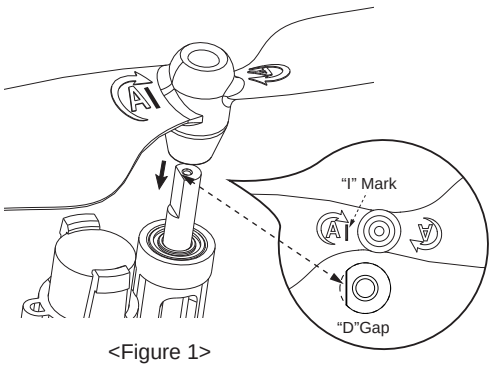
4. PROPELLERS



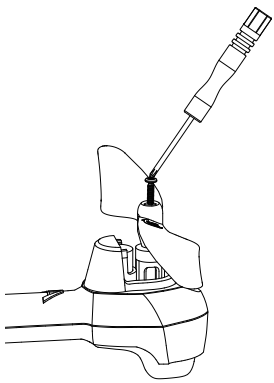




Attach the propellers to the corresponding motors that marked by A and B,tighten the propellers and keep the motors deadlocked with the screw-driver.



<Figure 1>



Please match the "I" mark on propellers to the "D" gap on motor shafts when assembling as figure 1 shows.

⚠ ● Make sure that the A and B propellers installed correctly. The X4 will not fly if propellers were improperly installed.

5. START TO FLY

5.1 THE FLIGHT ENVIRONMENT

(1) The flying area should be open and without tall buildings or other obstacles; the steel structure within building would interfere with the compass and the GPS signal.

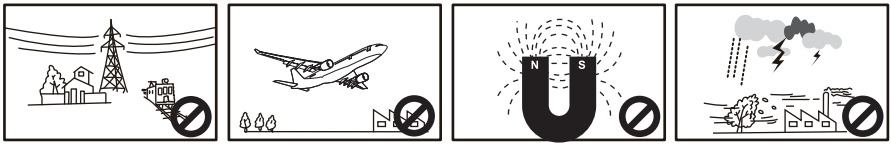
(2) DO NOT fly in bad weather such as strong wind, heavy snow, rain or foggy day.

(3) Keep away from barriers, people, power cables, trees, and other obstructions.

(4) Do not fly near radio towers or airports.

(5) The X4 control system wil not work properly at the South or North Pole

(6) DO NOT fly in restricted areas and please obey your country's laws and regulations.

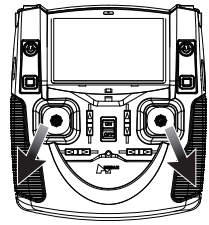


High Tension Line　　Airport　　Magnetic　　Rain

5.2 ARM/ DISARM THE MOTORS

Arm the motors

Method : Pull the left stick to the left lowest corner and the right stick to the right lowest corner as the picture shows. Release both sticks after the motors armed.



Disarmed the motors

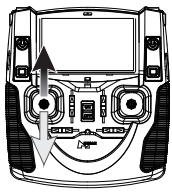
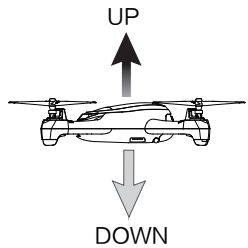
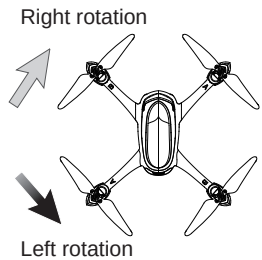
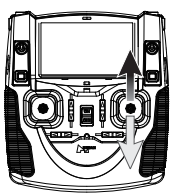
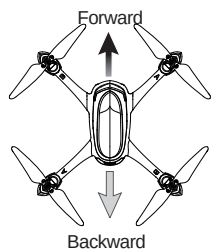
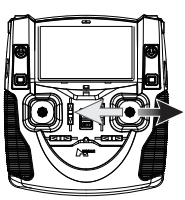
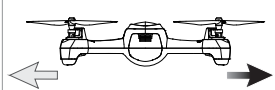
Method : Pull the left stick to the left lowest corner and the right stick to the right lowest corner again, and release both sticks after the motors disarmed.

⊘ Do not stop the motors during the flight to avoid any crash.

Push the sticks as slightly as you can. Release the sticks after the motors armed or disarmed.

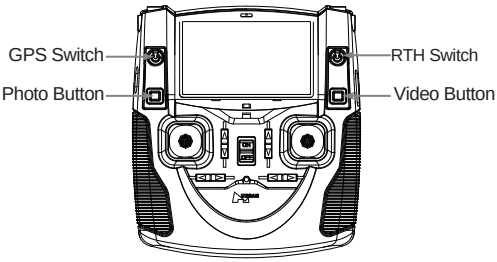
5.3 BASIC FLIGHT

The operation mode for the transmitter including Mode 1 or Mode 2. The manual will use Mode 2 as an example to illustrate the transmitter's operation.

Transmitter (Model 2)	X4	Control Ways
		The throttle stick controls the ascent and descent . Push up the stick and the X4 will ascend. Pull down the stick and the X4 will descend. When the stick in center, the X4 will hover and hold its alititude automatically .
		The Rudder stick controls the rotate direction Push the stick to the left and the X4 will rotate counter-clockwise Push the stick to the right and the X4 will rotate clockwise. When the stick is in center,the X4 will keep the current direction and not rotate. Any harder push will cause the X4 to rotate faster in the corresponding directions.
		The Elevator stick moves the X4 forward and backward. Push the stick up the and the X4 will fly forward. Pull the stick down and the X4 will fly backward. When the stick is in center, the X4 will hold its position. The angle of stick movement corresponds to the angle of tilt and flight speed.
		The Aileron stick controls left and right flight. Push the stick to the left and the X4 will fly to left. Push the stick to the right and the X4 will fly to right. The X4 will keep the current status when the stick in center. The flight speed and tilt angle have connection with the angle when push the sticks.

position 1 (upward)

position 2 (downward)



Important Note: The GPS and RTH functions are only available outdoor.Please make sure the two switches keep downward when indoor.

The GPS Switch controls the position-hold function.

In position 1 (up), the GPS function works.

In position 2 (down), the GPS function is inactive.

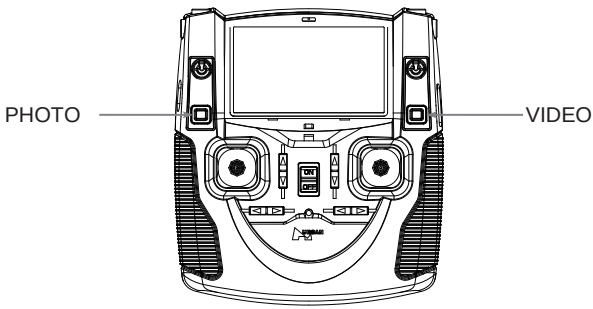
The RTH Switch controls the automatic return home function.

In position 1 (up), the RTH function works.

In position 2 (down), the RTH function is inactive.

For the Photo/Video function, please always power off the quadcopter and the transmitter when inserting or removing the SD card

5.4 PHOTO/VIDEO



Press the Photo/Video button for 0.5 second to take photos.

Press the Photo/Video button for 1.5 second to take videos and press again to save the videos.

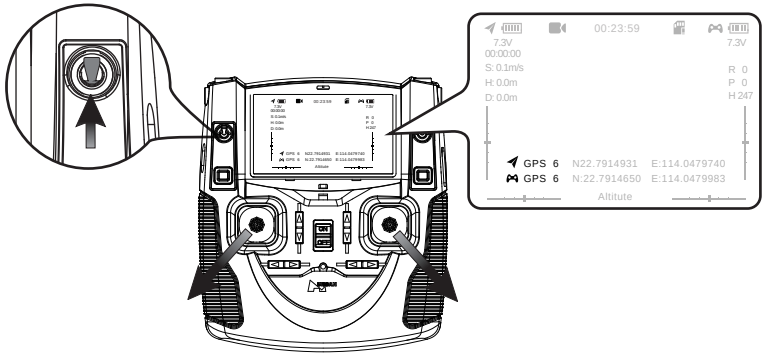
⚠ Please stop recording before the SD card removed.

1. The video will stop when the transmitter battery runs low.
2. When the memory of SD card is full, he screen will display “SD Full”.
3. It is best to use a class 4+ SD card, and the capacity should no less than 4GB.
4. Format the SD card in the transmitter before use.

6. ADVANCED PERFORMANCE SETUP

6.1 GPS POSITIONING/ HOME POINT SETTING

1.) GPS Positioning works ONLY when the GPS signal has no less than 6 satellites.



Pull up the GPS switch to activate the GPS positioning.

Pull down the GPS switch to exit the GPS positioning and only altitude hold works.

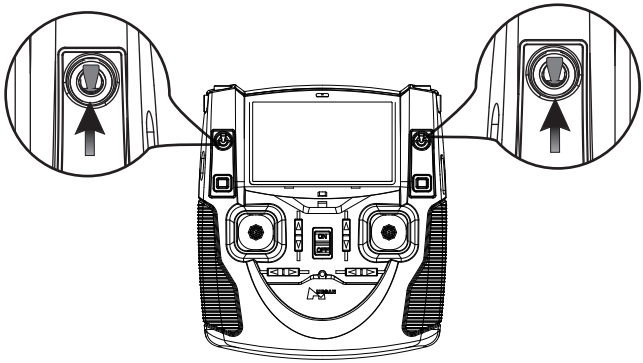
2.) Home Point is recorded when armed the motors with no less than 6 GPS satellites.

3.) It should be in an open place to search for the GPS satellites, it'll take 3 mins to finish the searching, and the GPS signal strength depends on the flying environment.

6.2 RTH MODE (RETURN TO HOME)

ENTER INTO RTH MODE

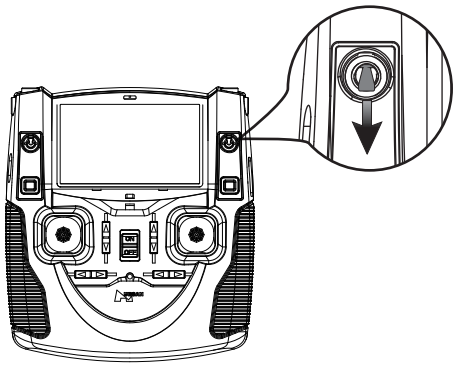
Push the GPS Switch and the RTH Switch up, and the quad copter will enters into RTH mode. The flight control system will control the quad copter fly back to the home point and landing automatically.



⚠ The RTH MODE only works when the GPS mode is activated with no less than 6 satellites. The Home Point is recorded when armed the motors with no less than 6 GPS satellites.

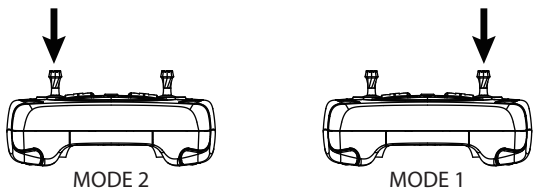
EXIT RTH MODE

Pull down the RTH Switch, the X4 will exit the RTH Mode.



6.3 HEADLESS MODE

Headless mode means the X4 will default its nose direction as the up ahead when the mode is activated.



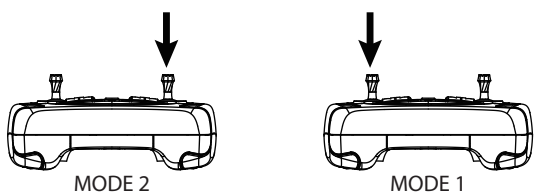
Press the Throttle stick 0.5 second to switch on/ off headless mode.

Press the stick to enter into the headless Mode, indicated by two "beeps" sounds and the “Headless On” displays on the LCD.

Press the stick again to exit headless Mode, indicated by one "beep" sound and the ”Headless Off” displays on the LCD.

6.4 FOLLOW ME MODE

Follow me mode means the drone follows the transmitter automatically due to the built-in GPS system.



Press the Elevator stick for 0.5 second to switch on/ off follow me mode.

Press the stick to enter into the follow me Mode, indicated by two "beeps" sounds, the " Follow On" displays on the LCD and the drone will turn and face to the transmitter.

Press the stick again to exit follow me Mode, indicated by one "beep" sound and the " Follow Off" displays on the LCD .

⚠ The follow me mode only works when the GPS both on transmitter and on drone with no less than 6 satellites.
The follow me mode will be exited when you push/press any keys on transmitter except the throttle.

6.5 FAILSAFE MODE

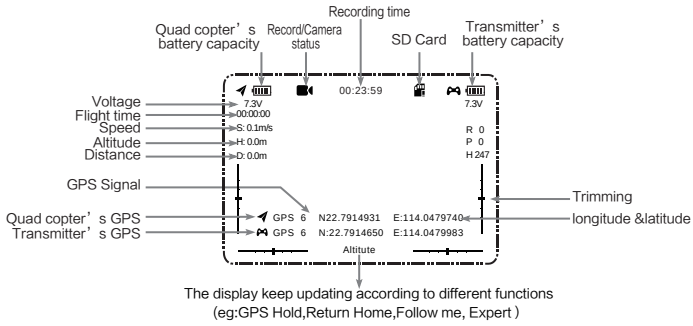
The quad copter will enter into failsafe mode when the connection is lost from the transmitter. The flight control system will control the quad copter to return to the HOME POINT and landing automatically. The failsafe mode help to aviod injuries or damages.

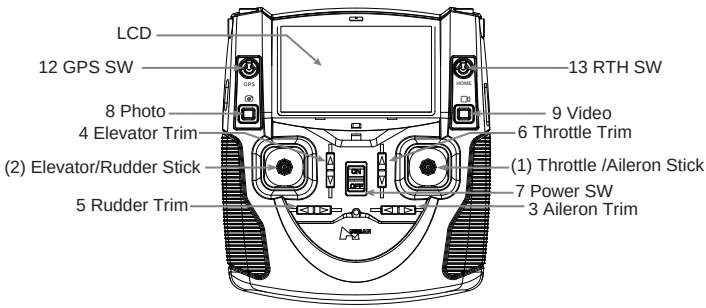
CONDITIONS WHICH ACTIVATE THE FAILSAFE MODE

(1) Transmitter is power off.
(2) The flight distance is beyond the effective distance of the transmitter's signal transmission.
(3) The transmitter's signal was interrupted by some other strong electronic interference.

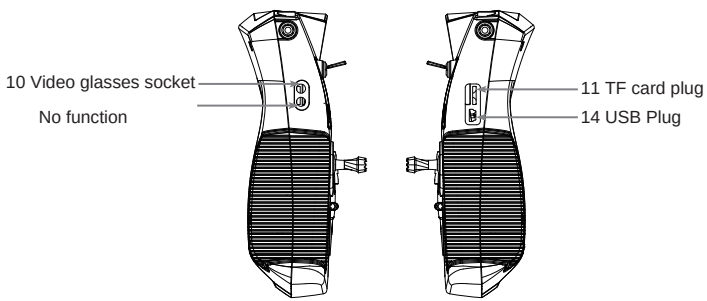
⊘
- To ensure that the X4 can return safely to its home point when signal is lost, fly the X4 in the safe flight area.
- If the quantity of GPS satellites drops below six for more than 20 seconds while the X4 is returning to home, the X4 will descend automatically.
- The X4 will not avoid obstacles automatically while in failsafe mode. You must set the height value to avoid obstacles in the flight path.

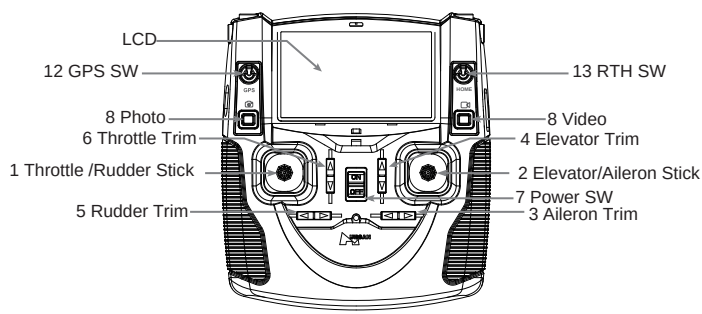
7. TRANSMITTER





(MODE 1)



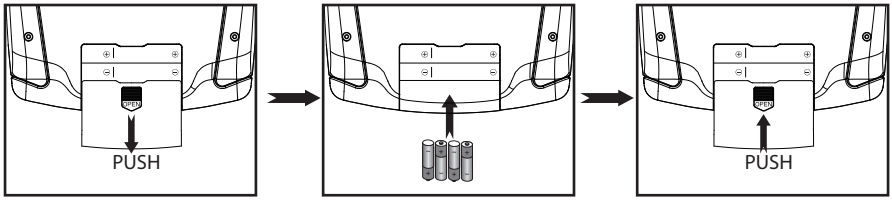


(MODE 2)

7.1 INPUT KEY FUNCTION

S/N	Mode/ Control	Function
(1)	**MODE 1** Throttle/Aileron Stick	Push the stick forward or backward and the quadcopter will ascend or decend; Push the stick left or right and the quadcopter will fly to left or to right.
(2)	**MODE 1** Elevator/Rudder Stick	Push the stick forward or backward and the quadcopter will fly forward or backward;Push the stick left or right and the quadcopter will rotate in counter clockwise or in clockwise.
1	**MODE 2** Throttle/ Rudder Stick	Push the stick forward or backward and the quadcopter will ascend or decend; Push the stick left or right and the quadcopter will rotate in counter clockwise or in clockwise
2	**MODE 2** Elevator /Aileron Stick	Push the stick forward or backward and the quadcopter will fly forward or backward;Push the stick left or right and the quadcopter will fly to left or to right
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 Switch	Push to ON to turn on the transmitter. Push to OFF to turn off.
8	Photo	Press the photo button to shoot photos;
9	Video	Press video button and start the record and press again to stop
10	Video glasses socket	Connect Hubsan video glasses (The video glass is excluded)
11	TF card plug	The TF card can be inserted into the card plug on theTX or the quad copter. (Recommend on the quad copter)
12	GPS SW	Push the switch up, the bulit-in GPS will calculate the quad copter's position and height and help to keep the quad copter in a stable hover (ONLY FOR OUT DOOR)
13	RTH SW	Push the switch up, the quad copter will return to the home point automatically (ONLY FOR OUT FOOR)
14	USB plug	Only for engineer to upgrade the software, please do not use it to connect computer

7.2 INSTALL THE TX BATTERY



Remove the cover

Install 4 x AA batteries according to the correct polarities

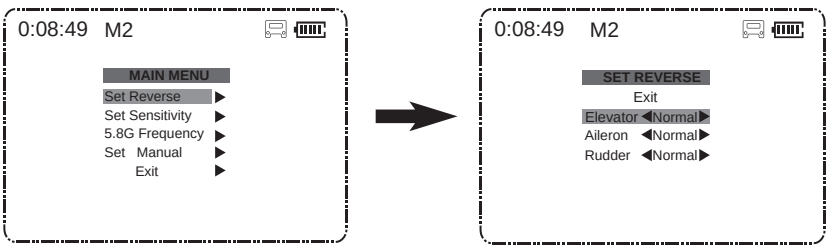
Close the cover

- Do not mix old and new batteries
- Do not mix different types of batteries
- Do not charge non-rechargeable battery.

7.3 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 it will change the controls back to front.

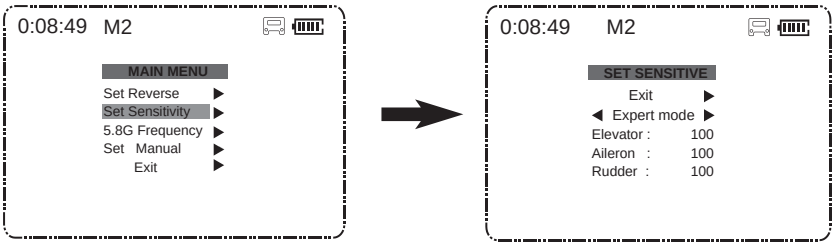
Pull the throttle stick to the lowest position and long press the Pitch stick simultaneously to enter into MAIN MENU interface. Push the Elevator stick up/down to select “Set Reverse”. Select the “Exit” to exit.



7.4 SENSITIVITY SETUP

If you would like to change the sensitivity of any of the stick functions then follow the instructions below.

Pull the throttle stick to the lowest position and long press the Elevator stick to enter into the MAIN MENU interface. Push the Elevator stick up/down to select “Set Sensitive”, push the stick right to enter into the “ set sensitive” interface, select “Expert mode” or “ Normal mode”. Select” Exit” to exit.

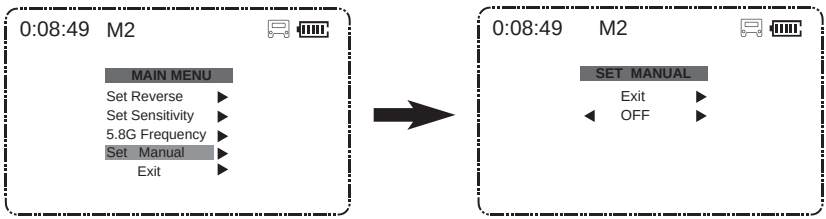


Sensitivity default setting is in Expert Mode.

7.5 MANUAL MODE SETUP

If you would like to make acrobatic flights, such as throwing, please switch off the GPS function and follow the instruction below to enter into the Manual mode

Pull the throttle stick to the lowest position and long press the Elevator stick to enter into the MAIN MENU interface. Push the Elevator stick up/down to select “Set Manual”, push the stick right to enter into the “ SET MANUAL” interface, select “ON” (without altitude function) or “OFF” (with altitude function).Select” Exit” to exit.



Manual Mode default setting is OFF.

Notice:

1. When the power on the transmitter runs low, the red LED will blink quickly and the LCD screen will turn black, also the transmitter and X4 may disconnect. Please replace with new batteries.
2. If the batteries in the transmitter runs low while flying the X4, you can still control the X4, please land the X4 and then replace batteries.
3. The Transmitter can only use 2S Lipo batteries, 4XAA batteries or NI-MH AA batteries, other batteries will damage the Transmitter.

8. COMPASS CALIBRATION

Compass calibration is required before the first time flight otherwise the system may not work properly. The compass is very sensitive to electromagnetic interference which can cause abnormal compass data and lead to poor flight performance or even flight failure. Regular calibration enables the compass in optimum performance.

⊘ • Do not calibrate the compass in a strong magnetic field

• Do not carry ferromagnetic materials with you while calibrating the compass, such as keys, cell phones.

COMPASS CALIBRATION PROCEDURES

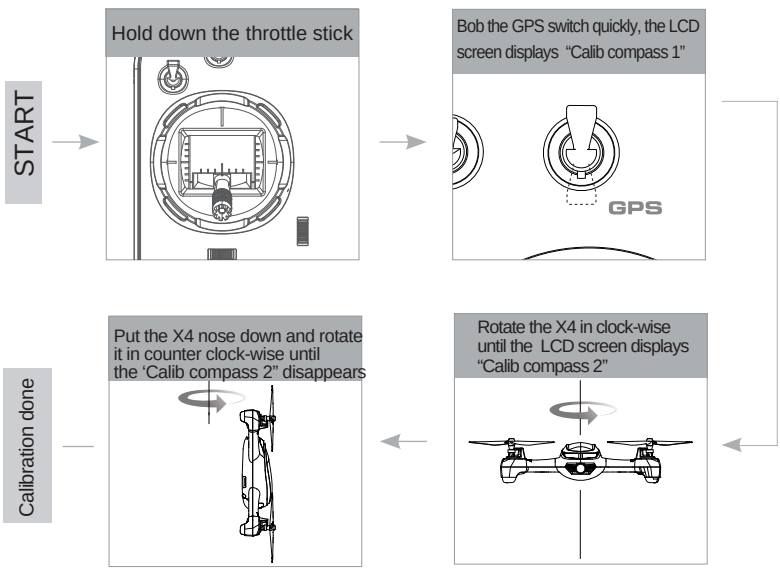
Please follow the calibrating procedures before the first flight.

1.) Hold the Throttle Stick fully down, bob the GPS switch quickly until the transmitter displays " Calib compass 1"

2.) Rotate the X4 horizontally in clock-wise until the LCD screen displays " Calib compass 2"

3.) Put the X4 nose down and rotate it vertically in counter clock-wise until the " Calib compass 2" on screen disappears.

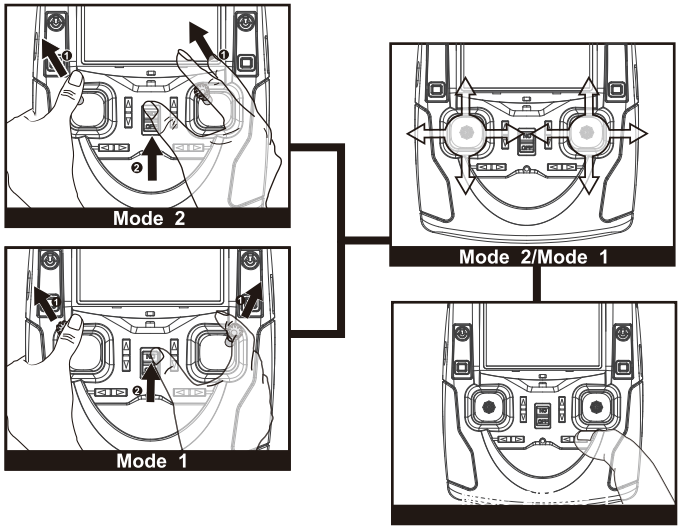
4.) Calibration done.



9. TRANSMITTER CALIBRATION

Mode 2: Push both sticks to the upper left corner and power on the transmitter simultaneously,rotate both sticks in circles for twice, then press any trim for 1.5 second until the LED on the transmitter turns in solid green which indicating a successful calibration.

Mode 1: Push the left stick to the upper left corner and the right stick to the upper right corner and power on the transmitter simultaneously, rotate both sticks in circles for twice, then press any trim for 1.5 second until the LED on the transmitter turns in solid green which indicating a successful calibration.

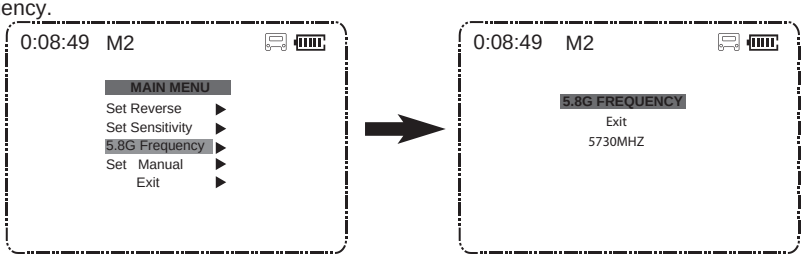


⚠ The transmitter mode can be shifted according to the above operation.

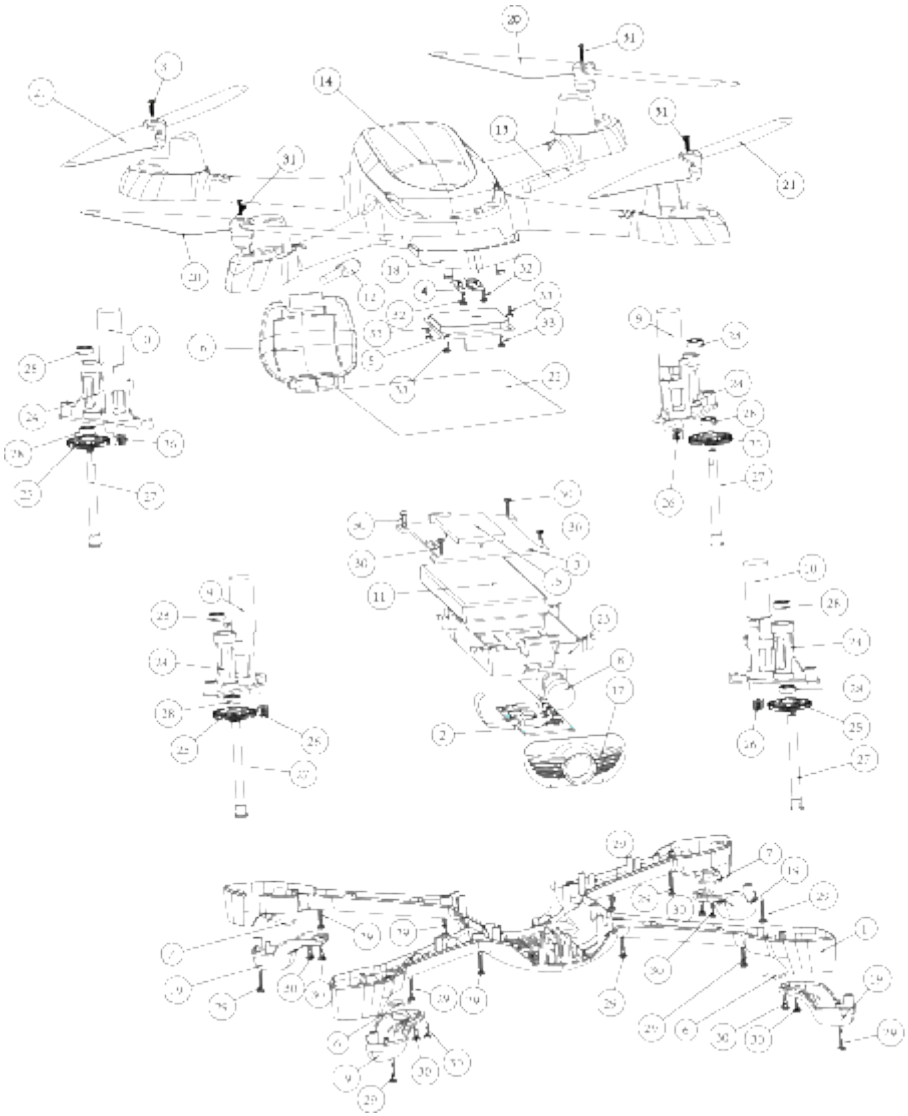
10. FREQUENCY SELECTABLE 5.8GHZ

The transmitter will automatically find the best frequency to ensure a live video with good quality of transmission. Please re-select the frequency from 5730MHZ to 5845MHZ to get a better video transmission when necessary.

Pull the throttle stick to the lowest position and press the Elevator stick for 1.5 second to enter into the MAIN MENU interface. Push the Elevator stick up/down to select “5.8G Frequency”, push the stick to the right to enter into the “ 5.8G frequency” interface, select a matched frequency.



EXPLODED VIEW



NO	PART NAME	QTY
01	Lower Boby Shell	1
02	5.8 GHz Transmission Module	1
03	Main Control Board	1
04	Compass Module	1
05	GPS Module	1
06	Blue LED	2
07	Red LED	2
08	Camera Module	1
09	Motor A	2
10	Motor B	2
11	Li-Po Battery	1
12	5.8G Attenna	1
13	2.4G Attenna	1
14	Upper Boby Shell	1
15	GPS Shielding Case	1
16	Battery Cover	1
17	Lens Holder	1

	PART NAME	QTY
18	Eye Lampshade	1
19	Rubber Feet	4
20	Propeller A	2
21	Propeller B	2
22	Signal Isolation Membrane	1
23	Battery Compartment	1
24	Motor Holder	4
25	Rotary Gear	4
26	Motor Gear	4
27	Motor Shaft	4
28	Bearing	8
29	Screw	12
30	Screw	12
31	Screw	4
32	Screw	2
33	Screw	4

H502S SPARE PART CHART

H502S-01
Body Shell Set

H502-01
Battery Cover

H502-02
Eye Lampshade

H502S-02
Lens Holder

H502-03
Lamp Base A/B

H502-04
Screw Set

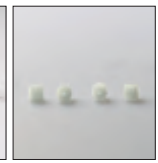
H502S-03
Propeller A/B

H502-05
Motor A

H502-06
Motor B

H502-07
Motor Holder

H502-08
Bearing

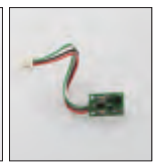


H502-09
Motor Gear A

H502-10
Motor Gear B

H502-11
Motor Shaft

H502-12
LED Kit



H502-13
2.4G Module

H502S-06
Camera Module 720P

H502-14
GPS Module

H501S-13
Compass Module

H502-16
Battery

H502-17
TX

H502-18
USB Charger

H502-19
Screwdriver

H502S-04
Camera Module 1080P

H502S-05
Crash Pack

H502-21
Battery Pack

FCC INFORMATION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the local dealer or an experienced radio/TV technician for help.

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

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.

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.

User manual is subject to change without prior notice due to unforseen product upgrades.

Download the latest user manual from

WWW.HUBSAN.COM

VERSION 1.0 EN