

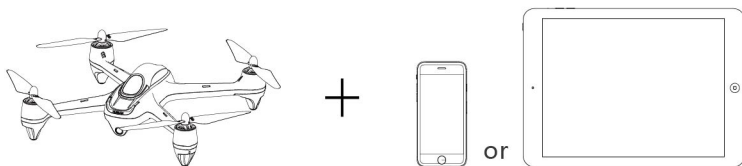
H501A X4 AIR PRO

《H501A User Manual》

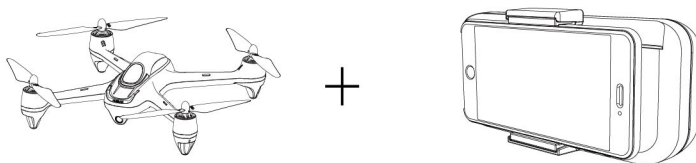
Version 2.0

3 DIFFERENT WAYS TO FLY, 3 CONFIGURATIONS

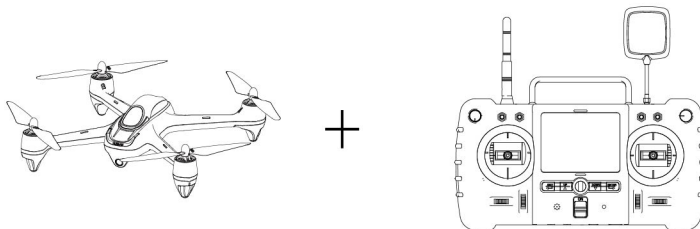
1. Aircraft + mobile device (phone/tablet)



2. Aircraft + mobile device + relay



3. Aircraft + remote control/transmitter

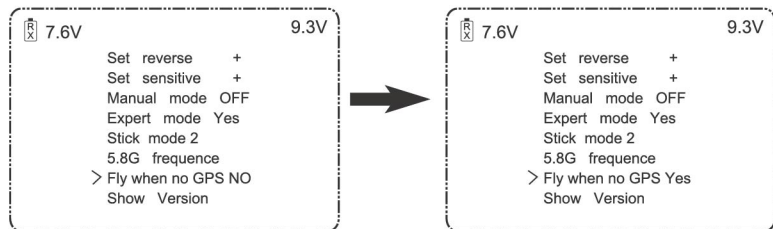


WARNING!

By default, the aircraft will not start up or take off with less than 6 satellites.

If you need to fly the aircraft without GPS, please enter the Main Menu and change the corresponding setting.

Menu settings: Hold the throttle to the bottom of its socket and simultaneously long press ENTER to enter the Main Menu Use the Up/Down keys to select "FLY WHEN NO GPS"; press the ENTER key to change the "NO" to "YES".



IMPORTANT SAFETY INFORMATION

Operation: Be extremely careful and responsible when using the quad. Small electronic components can be damaged due to crashes or exposure to moisture/liquid. To avoid any injuries, do not use the quad with broken or damaged components.

Maintenance: Do not try to open or repair the units by yourself. Please contact Hubsan or Hubsan authorized dealers for service. For more information, please visit the official website at www.hubsan.com.

Battery: Do not disassemble, squeeze, impact, burn, drop or trample the battery. Do not short-circuit or put the battery terminal in contact with metal. Do not expose the battery to temperatures above 60 ° C. Charge the aircraft battery prior to flight. Use a Hubsan dedicated charger for charging. Keep the battery out of the reach of children and away from any kind of moisture.

Flight: Please be mindful of personal safety and the safety of others while flying.

- Do not fly the quad in crowded areas and always be aware of the safety of yourself and others.
- Do not fly in bad weather conditions.
- Do not attempt to catch the aircraft while it is in flight.
- This product is intended for experienced pilots over the age of 14.
- Keep your body away from the propellers after they are powered on. High speed propellers are very dangerous.

After every flight, completely disarm the aircraft motors and disconnect the aircraft from power. Then, you may power off the remote control. Do not do so before at least disarming the aircraft motors! if the aircraft's motors are still running when you shut the remote control, the aircraft may engage its failsafe and attempt a Return to Home.

Read the Disclaimer first before use.

SYMBOL EXPLANATION

 INSTRUCTION


 IMPORTANT NOTICE

 PROHIBITED OPERATION

 EXPLANATION/REFERENCE

USAGE ADVICE (Hubsan has created the following operational and safety content for the H501A)

 《Quick Start Guide》

 《Disclaimer and Safety Guidelines》

Please read the "Disclaimer and Safety Operation Guide" carefully before your first flight to understand safety precautions. Watch the H501A tutorial video on our official website or YouTube channel. The "H501A User Manual" contains more detailed instructions for use and may be downloaded at www.hubsan.com. Content is subject to change without notice.

SAFETY ADVISORY NOTICE FOR LITHIUM-POLYMER (LI-PO) BATTERIES

LiPo batteries are different from conventional batteries in that their chemical contents are encased in a relatively lightweight foil packaging. This has the advantage of significantly reducing their weight but it 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:

- If you do not plan to fly the quad for a long time, store the battery ~50% charged to maintain battery performance and life.
- Please use Hubsan chargers for battery charging.
- Discharge the battery at 5C current or below. To avoid discharge related battery damage, do not prolong the discharge time.
- To avoid fire, do not charge on carpet.
- Batteries need to be recharged if unused for over 3 months.

1. Do not disassemble or reassemble the battery.
2. Do not short-circuit the battery.
3. Do not use or charge near sources of heat.
4. Do not put the battery in contact with water or any kind of liquid.
6. Do not puncture or subject the battery to force of any kind.
7. Do not throw or manhandle the battery.
8. Never charge a battery that has been damaged, become deformed or swelled.
9. Do not solder on or near the battery.
10. Do not overcharge or over discharge the battery.
11. Do not reverse charge or reverse the battery polarities.
12. Do not connect the battery to a car charger/cigarette lighter or any other kind of unconventional power source.
13. This battery is prohibited for non-designated devices.
14. Do not touch any kind of liquid waste or byproduct from batteries. If skin or clothes come in contact with these substances, please flush with water!
15. Do not mix other types of batteries with lithium batteries.
16. Do not exceed the specified charging time.
17. Do not place the battery in a microwave or in areas of high pressure.
18. Do not expose the battery to the sun.
19. Do not use in environments with high static electricity (64V and above).
20. Do not use or charge in temperatures below 0 °C and above 45 °C.
21. If a newly purchased battery is used, leaking, possesses a bad smell or any other abnormality, return immediately to the vendor.
22. Keep away from the reach of children.
23. Use a dedicated battery charger and follow all charging requirements.
24. Minors who use the battery and its dedicated unit must be supervised by an adult at all times.

CONTENTS

IMPORTANT SAFETY INFORMATION	1	6. FAILSAFE	29
SYMBOL EXPLANATION	1	6.1 Low power	29
USAGE ADVICE	2	6.2 Loss of flight control connection	29
H501A PROFILE	4	H501A FREQUENTLY ASKED	
1. THE AIRCRAFT	4	QUESTIONS	30
1.1 Aircraft overview	4	H501A ACCESSORIES	33
1.2 Aircraft component breakdown	4		
1.3 Aircraft battery	5		
1.4 Propellers	5		
1.5 Aircraft LED indicators	7		
2. REMOTE CONTROL/TRANSMITTER	7		
2.1 Remote control key functions	8		
2.2 Battery installation	10		
2.3 Transmitter stick calibration (Mode 1 and Mode 2 throttle settings)	11		
2.4 5.8Ghz frequency selection settings	12		
2.5 Antennas	12		
3. THE X-HUBSAN APP	13		
3.1 APP Overview	13		
3.2 APP Interface Guide	13		
4. RELAY	14		
4.1 Relay Overview	14		
4.2 Battery	15		
5. FLIGHT INFORMATION	15		
5.1 Flight Environment requirements	15		
5.2 Pre-Flight Checklist	17		
5.3 Flying with the APP	17		
5.4 Flying with the remote control/trans- mitter	19		
5.5 Flying with the HT005 relay	27		

H501A PROFILE

Thank you for purchasing a HUBSAN product. The H501A is an easy to fly aircraft, capable of a variety of flight functions.

- Please read and follow the manual carefully for proper operation and use.
- Be sure to keep the manual as important reference for future routine maintenance and operational information.



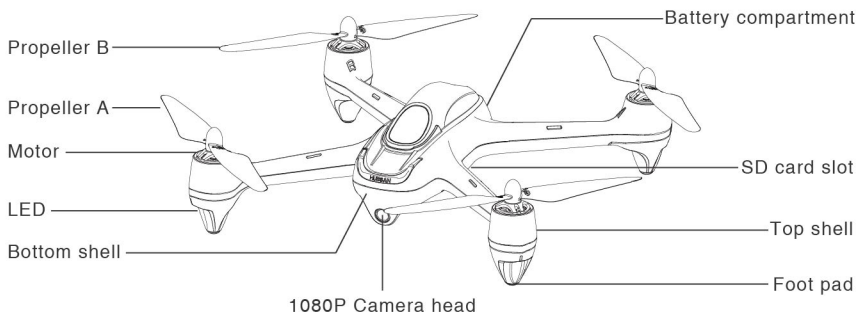
FPV : Also known as First Person View, or the first person perspective. With this perspective, users can intuitively fly the aircraft and enjoy an immersive flight experience.

1. THE AIRCRAFT

1.1 Aircraft Overview

The H501A aircraft primarily comprises the flight control, FPV, GPS positioning, power system and battery components. This section describes in detail the various functions and components on the aircraft.

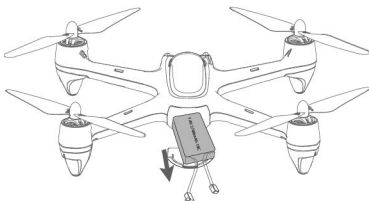
1.2 Aircraft Component Breakdown



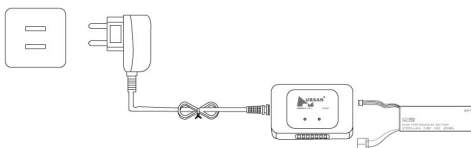
1.3 Aircraft Battery

The quadcopter battery is a rechargeable Li-Po battery rated at 7.4V and has a 2700mAh capacity. Be sure to use a Hubsan dedicated charger for charging. Fully charge the battery before flight.

(1) Installing the battery: Push the battery into its compartment with its lines facing away from the unit. Connect the blue adapters, noting the positive and negative polarities. Coil the power line into the compartment and then shut the battery hatch.



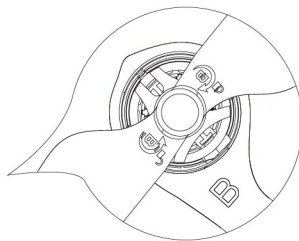
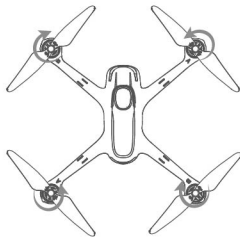
(2) To charge the battery, connect the battery to the balance charger and connect the charger to the AC adapter (if necessary, please use a power conversion adapter). The balance charger LEDs are red while charging and turn green when the battery is fully charged. Please disconnect the battery from the charger immediately afterwards. Full charging time is around 180 minutes.



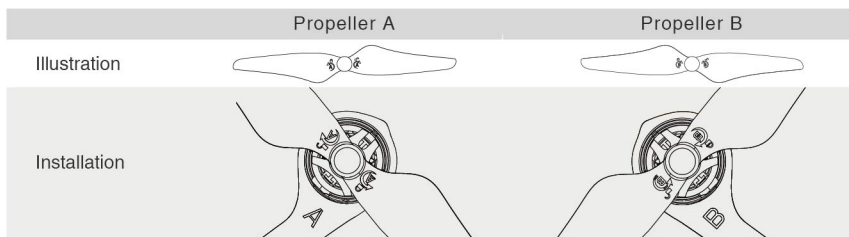
- Make sure the battery is fully charged before each flight.
- Please do not leave unattended while charging.

1.4 Propellers



The X4 aircraft uses 7.3-inch propellers. Each is marked with either an A or a B. Please replace damaged propellers. Before installing the propellers for the first time, please check whether the propeller and motor arm read "A" or "B". The two letters should match.



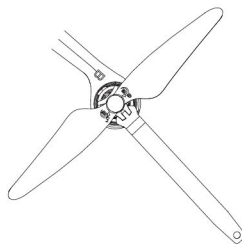
(1) Installation: Mount all 4 propellers on their motors (be sure all letters on the propellers match the letters on the motor arms). Turn each propeller in the indicated "lock" direction.



Symbol explanation

-  Indicates that the propeller tightens when turned in this direction.
-  Indicates that the propeller loosens and may be removed when turned in this direction.

(2) Removal: When the blade is damaged or needs to be replaced, hold the propeller with a hand or the provided auxiliary wrench, and remove by turning it in the indicated "unlock" direction.



- The propellers are self-tightening units. Please do not use other screws or screw glue to attach them to the motor shafts.
- Make sure that the propellers are installed in the correct positions, otherwise the aircraft will not be able to fly normally.
- Since the propeller blades are thin and somewhat sharp, it is recommended that users wear gloves during installation to prevent accidental scratches.

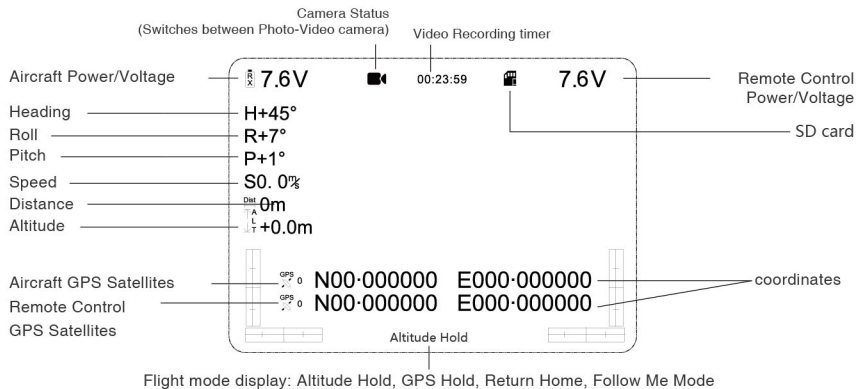
1.5 Aircraft Led Indicators

H501A has 4 LEDs; the fore/frontal LEDs are blue and the rear LEDs are red. The LED status indications are defined as follows:

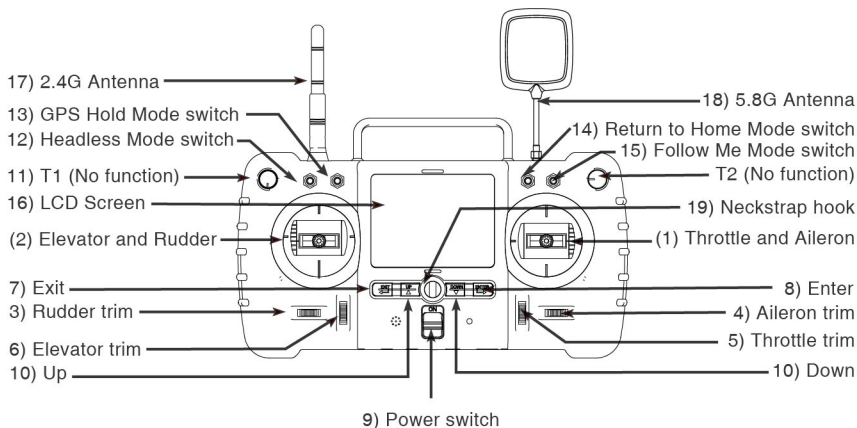
FUNCTION	LED STATUS INDICATION
Power on and start up	All 4 LEDs flash simultaneously
Compass Calibration	Calib. Compass 1, all 4 LEDs flash clockwise; Calib. Compass 2 LEDs should be flashing in vertical pairs, alternately
Horizontal Calibration	All 4 LEDs flash simultaneously
Inertial Sensor Calibration	All 4 LEDs flash clockwise
Flight Mode	All 4 LEDs are solidly lit
Low Power	Fore/frontal blue LEDs stay solidly lit and the rear red LEDs flash rapidly
How to turn off the LEDs	When recording and/or taking pictures, the throttle's vertical trim button serves as an on/off toggle for the LEDs
Flight Control Signal Loss Warning	When the flight control signal is lost, the rear LEDs will stay solid while the fore LEDs will slowly flash

2. REMOTE CONTROL/TRANSMITTER

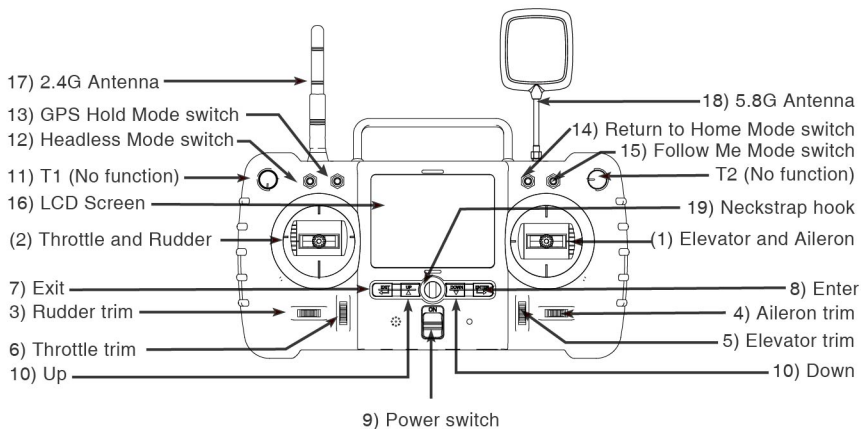
The H906A is a multi-functional FPV remote control that features a 3.7-inch LCD display and 5.8G real-time video transmission. Recommended flight distance is 400 meters.



2.1 Remote Control Key Functions



Mode 1

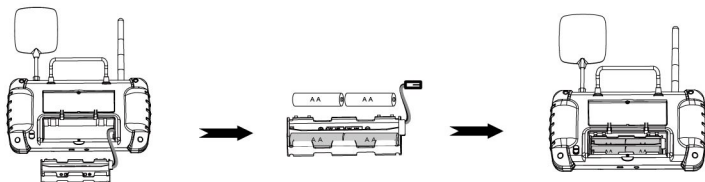


Mode 2

S/N	KEY/SWITCH	FUNCTION
1)	Throttle/Rudder stick (Mode 2)	Push the stick forward or backward and the quadcopter will ascend or descend (respectively). Push the stick left or right and the quadcopter will rotate counterclockwise or clockwise (respectively).
2)	Elevator/Aileron stick (Mode 2)	Push the stick forward or backward and the quadcopter will fly forwards or backwards (respectively). Push the stick left or right and the quadcopter will fly left or right (respectively).
(1)	Throttle/Aileron stick (Mode 1)	Push the stick forward or backward and the quadcopter will ascend or descend (respectively). Push the stick left or right and the quadcopter will fly left or right (respectively).
(2)	Elevator/Rudder stick (Mode 1)	Push the stick forward or backward and the quadcopter will fly forwards or backwards (respectively). Push the stick left or right and the quadcopter will rotate counterclockwise or clockwise (respectively).
3)	Rudder trim	Use the Rudder trim to adjust for counterclockwise and clockwise rotation/yaw drift.
4)	Aileron trim	Use the Aileron trim to adjust for left and right horizontal drift.
5)	Throttle trim	Throttle trim is normally centered. If the throttle channel is not centered, use the Throttle trim to adjust.
6)	Elevator trim	Use the Elevator trim to adjust for forward and backward drift.
7)	Elevator trim	Long press to exit Main Menu Short press to take photo
8)	ENTER (Video key)	Long press to enter Main Menu Short press to take video
9)	Power Switch	Push up/ON to turn on the transmitter. Push down/OFF to turn off.
10)	Up/Down	Use these Up and Down keys to scroll through menu settings.
11)	T1, T2	No Function
12)	Headless Mode switch	Flip the switch up to enter Headless Mode. Flip down to exit Headless Mode.
13)	GPS Hold Mode switch	Flip the switch up to activate GPS function. Flip down to deactivate GPS function.

S/N	KEY/SWITCH	FUNCTION
14)	Return to Home Mode switch	Flip the switch up to activate Return to Home Mode. Flip down to deactivate Return to Home Mode.
15)	Follow Me Mode switch	Flip the switch up to activate the Follow Me function.
16)	LCD	Displays flight data and a live video stream.
17)	2.4G Antenna	Transmits the flight control signal.
18)	5.8G Antenna	Receives the video transmission signal.
19)	Strap fastener	For use with a transmitter neck strap.

2.2 Battery Installation



Open the compartment hatch and remove the battery pack.

Insert 8 AA batteries into the slots of the battery pack. Take note to make sure you have correctly matched the polarities.

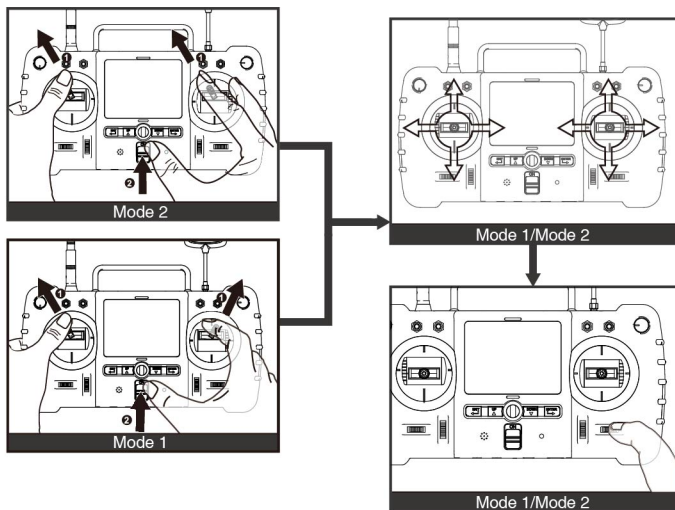
Plug the battery pack back into the compartment. Close the compartment hatch and screw it shut.

- Do not mix new and old batteries.
- Do not cross-use different types of batteries at the same time.

2.3 Transmitter Stick Calibration (Mode 1 And Mode 2 Throttle Settings)

Mode 1: Push the left stick to the upper left corner and the right stick to the upper right corner. Power the transmitter on while holding both sticks in their respective positions; the LCD screen will show "Calibrate Sticks Mode 2". Let go of the sticks, then pull them up, down, towards the center and outwards. Repeat this sequence 3 times, then release both sticks and hold the "Exit" key until the transmitter beeps. This indicates a successful calibration.

Mode 2: Push both sticks to the upper left corners. Power the transmitter on while holding both sticks in their respective positions; the LCD screen will show "Calibrate Sticks Mode 2". Let go of the sticks, then pull them up, down, towards the center and outwards. Repeat this sequence 3 times, then release both sticks and hold the "Exit" key until the transmitter beeps. This indicates a successful calibration.

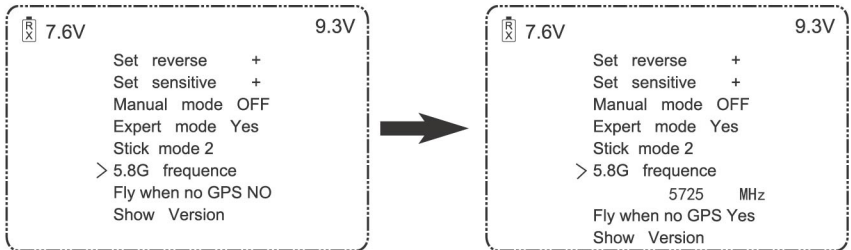


- Please use the above operation to switch and set the throttle for Mode 1 or Mode 2

2.4 5.8ghz Frequency Selection Settings

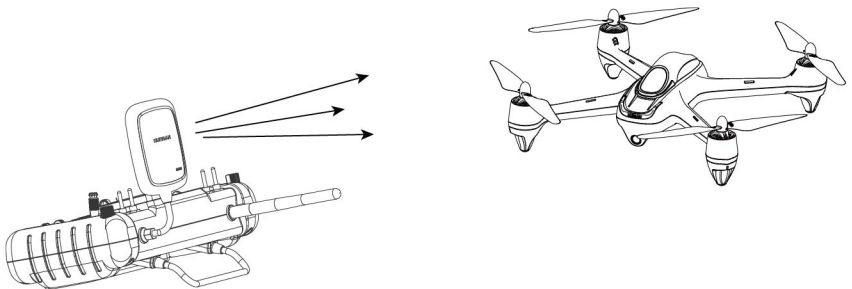
The transmitter will automatically find the best frequency to ensure a good quality live video. If desired or needed, users may adjust the 5.8GHz frequency for better video transmission.

To adjust the 5.8GHz frequency, first pull and hold the throttle stick downwards to the very bottom of its socket. While doing so, long press the "Enter" key to enter the Main Menu. Use the Up/Down keys and scroll to the "5.8G frequency" selection. Press "Enter" to enter the frequency menu; use the Up and Down keys to browse the different frequencies. Long press the "Exit" key to save the new frequency setting and exit.



2.5 Antennas

For maximum flight control range, the 2.4G antenna should point towards the quad with no obstructions between the two. The 5.8G antenna should be bent upwards. Point the side of the antenna with the "Hubsan" logo towards the quadcopter for clear video and to avoid interference.



3.THE X-HUBSAN APP

3.1 App Overview

X-Hubsan is a flight control APP designed for HUBSAN WIFI-enabled aircraft. Users can control flight, camera, video and flight parameters with the APP.

It is recommended to use a large screened smartphones or tablets for the optimal visual experience (recommended flight distance control is 100 meters).

Users may also purchase the HUBSAN HT005 relay (paired with mobile device and APP) to fly further distances (recommended flight distance is 400 meters).

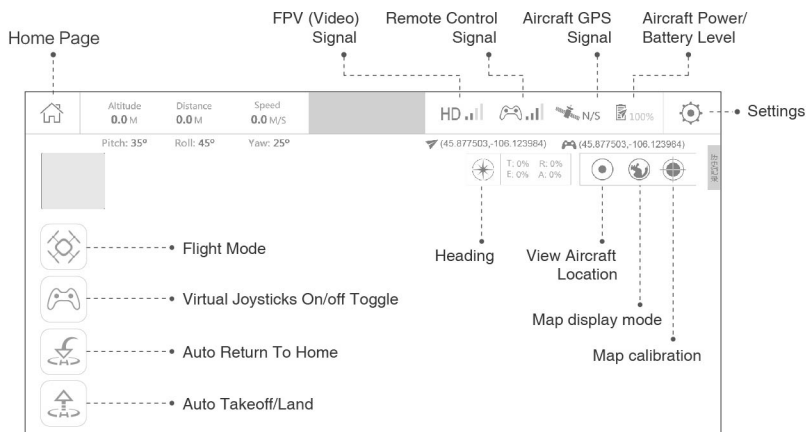


X-Hubsan

Please download the X-Hubsan APP for free via the App Store or Google Play.

3.2 App Interface Guide

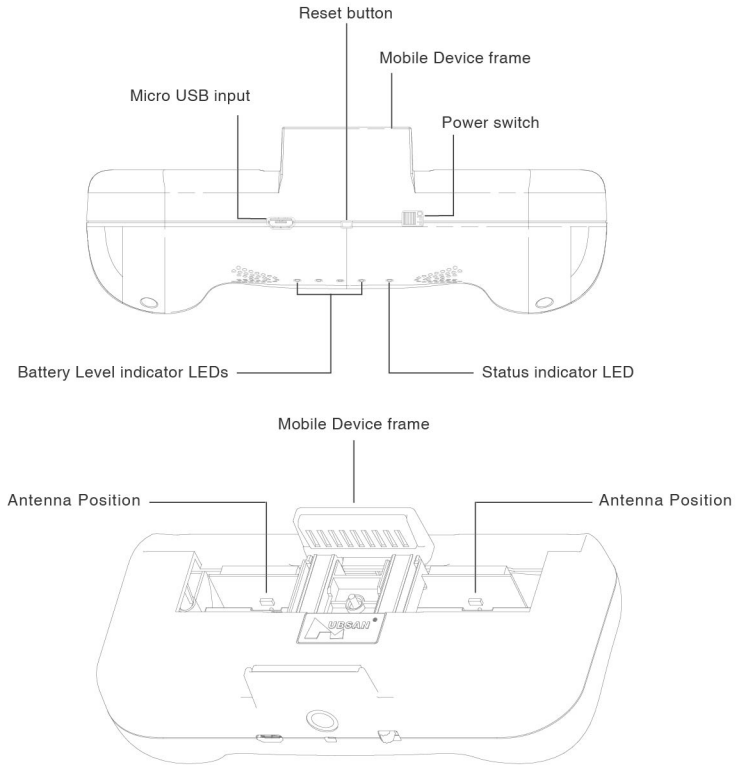
Users may enter the map or camera interfaces from the device menu.



4.RELAY

4.1 Relay Overview

The HUBSAN HT005 relay is a wireless signal amplifier. When used to amplify the aircraft WiFi and X-Hubsan APP connection, users can experience increased flight range. This device is suitable for any HUBSAN WiFi-enabled aircraft. Recommended flight distance is 400 meters.



LED Indicators

Status indicator: Red upon start up, green when start up is complete.

Power indicator: When charging, all 4 LEDs will flash blue. They will stay solidly lit when the battery is fully charged. Each LED represents 25% of the battery's maximum charge.

4.2 Battery

HUBSAN has designed a 2600mAh battery for the HT005 relay. The unit is equipped with overcharge, over discharge and low voltage protections.

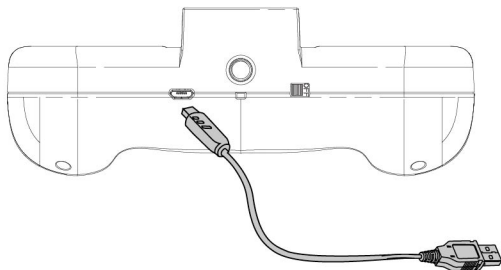
Specifications

Type	LiPo	Capacity	2600mAh
Voltage	3.7V	Consumption	9.62Wh
Ambient temperature for charging		0°C ~ +35°C	
Ambient temperature for use		-20°C ~ +60°C	

- Make sure the battery is fully charged before use.

CHARGING THE BATTERY

Connect the relay with the provided micro USB charging cable to a 5V adapter or a PC terminal to charge. When charging, all 4 LEDs will flash blue. They will stay solidly lit when the battery is fully charged. If the charge current is 1A, it takes 3 hours to fully charge. In general, approximate charging time is 3 hours.



- When needed, adapters must be supplied by the user; maximum charge current is 2.6A.

5. FLIGHT

It is recommended that users implement some kind of flight training (i.e using a simulator for flight practice, seeking professional guidance, etc.) before flying the H501A. Please select an appropriate flight environment for flight.

5.1 Flight Environment Requirements

- 1) Select an open environment devoid of high rise buildings and tall obstructions (such as trees and poles). Near buildings and obstacles, flight control signals and GPS signals can be severely weakened; GPS functions such as GPS mode and Return to Home may not function properly.
- 2) Do not fly in bad weather conditions (such as in wind, rain or fog).
- 3) Fly the drone in ambient temperatures of 0-40 °C.
- 4) When flying, please stay away from obstructions, crowds, high voltage lines, trees, water, etc.
- 5) To avoid remote control signals interference, do not fly in complex electromagnetic environments (such as venues with radio stations, power plants and towers).
- 6) The H501A cannot be used in or near the Arctic circle or Antarctica.
- 7) Do not fly in no fly zones.
- 8) Do not operate the aircraft near high pressure lines, airports or areas with severe magnetic interference.

5.2 Pre-flight Checklist

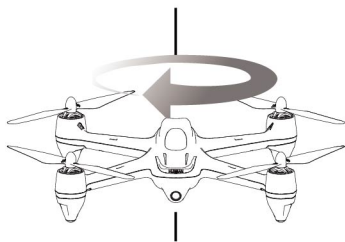
- 1) Make sure the aircraft battery and mobile device are charged and have adequate power.
- 2) Confirm that propellers and screws are properly installed.
- 3) If you are taking pictures, insert the microSD card required for taking pictures and videos.
- 4) Ensure the camera lens is clean.
- 5) Verify that the motors arm and spin smoothly.

5.3 Flying With The App

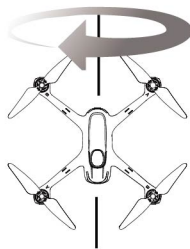
COMPASS CALIBRATION

The compass must be calibrated every time the aircraft is powered on. The compass is susceptible to interference by other electronic equipment, magnetic interference and metal, which can lead to erratic behavior and loss of control. Regular calibration helps keep the compass and its readings accurate.

- (1) Enter the X-Hubsan App camera page. Follow the APP's on-screen instructions.
- (2) Once both steps are completed, the calibration window will disappear.



Compass calibration 1 (horizontal)



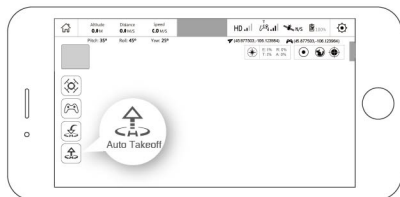
Compass calibration 2 (vertical)

AUTOMATIC TAKEOFF / LANDING

When compass calibration is complete and the aircraft has acquired 6 or more GPS satellites, users can choose to use the Automatic Take off/Land functions. Please follow the steps below.

Auto Takeoff: First, confirm that take-off conditions are safe and clear. Tap the Auto Takeoff key; the aircraft will automatically takeoff and hover at a height of ~2 meters from the ground. Note that the Auto Takeoff key will turn into an Auto Land key after the aircraft begins to fly.

Auto Land: First, confirm that landing conditions are safe and clear. Be sure to choose a flat, open area for the landing. Tap the Auto Land icon; the aircraft will slowly descend to the ground and disarm its motors.



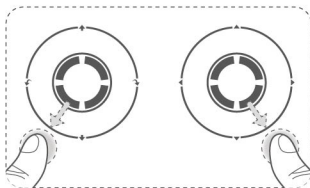
MANUALLY ARMING/DISARMING MOTORS

Arming /starting motors

Procedure: Simultaneously pull the virtual joysticks diagonally down-out to arm the motors (as shown in the below figure).

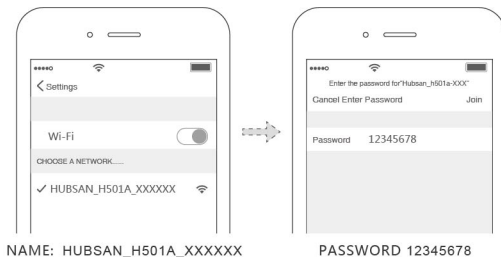
Disarming /stopping motors

Procedure: Pull the throttle joystick all the way down until the copter has completed its descent on the ground. Simultaneously pull the virtual joysticks diagonally down-out to disarm the motors (as shown in the below figure).



Basic flight operation:

- 1) Place the aircraft on flat, open ground; the head should be facing away/forward and the tail pointing towards the user.
- 2) Connect the aircraft to its battery and run the X-Hubsan APP. Pair the aircraft with the chosen mobile device via the device's WIFI utility.



- 3) Complete compass calibration (simply follow the APP prompts).
- 4) Confirm that take-off conditions are safe and clear. Tap the Auto Takeoff key; the aircraft will automatically takeoff and hover at a height of ~2 meters from the ground. Note that the Auto Takeoff key will turn into an Auto Land key after the aircraft begins to fly.
- 5) To land, tap the Auto Land icon and the aircraft will land. We recommend manually disarming the motors after the landing.
- 6) Power off the aircraft first and then X-Hubsan APP.

- Before taking off, make sure that there are no obstructions in the flight route or environment. Be sure to choose a flat, open area when landing.
- To ensure safe flight, do not use your mobile device for other purposes or pair your unit with another mobile device during operation. If you wish to use another device to fly the aircraft, please power the unit off before reinitiating a new pairing.

Please begin flight only when you have 6 or more GPS satellites. Waypoint/Return to Home/Orbiting/Follow Me modes are then accessible. Note: GPS cannot be accessed indoors.

5.4 Flying With The Remote Control/transmitter

Basic flight operation:

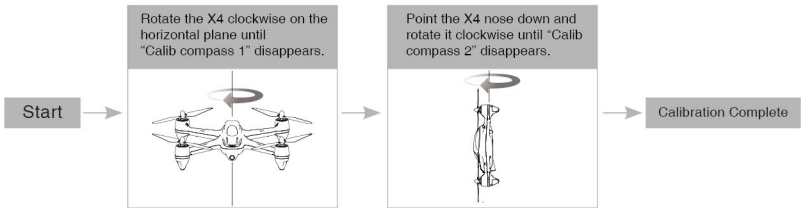
(1) Binding the quad to the transmitter

- 1) The binding process is usually completed in the factory. If you replace either the remote or the aircraft, the two will need to be re-bound to each other. Follow the below steps to re-bind. Hold the "Enter" key and power on the transmitter until "System Initialize" appears on the LCD screen.
- 2) Release the Enter key when the screen changes to display "Bind to Plane".
- 3) Power on the quad and place it very close to the transmitter. After a few seconds, the transmitter should then beep, indicating that binding has been successful.
- 4) If this does not happen and the aircraft's LEDs begin to rotate clockwise, the binding is unsuccessful. Please power off the quad and repeat the above steps.

(2) Compass calibration

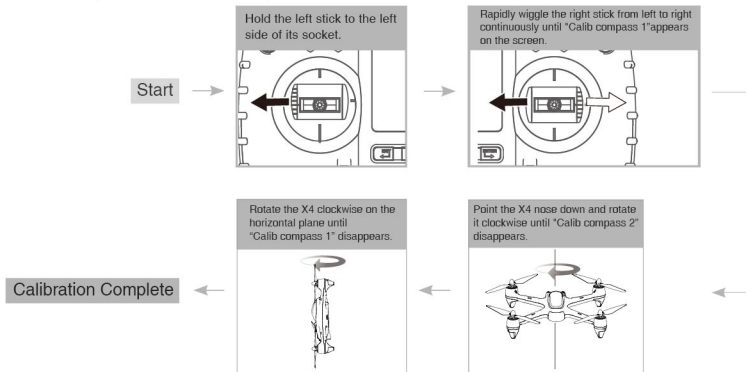
After the aircraft is powered on (and after a successful rebinding), the remote control/transmitter will ask you to calibrate the aircraft compass.

- 1) When the remote control screen reads "Calib compass 1", slowly rotate the aircraft on the horizontal plane. The LEDs should be red, flashing clockwise.
- 2) When the remote control screen reads "Calib compass 2", point the head of the aircraft downwards and rotate the aircraft in place (it should be vertical, pointing perpendicular to the ground). The LEDs should be flashing in vertical pairs, alternately.
- 3) When the "Calib compass 2" disappears from the screen and the LEDs begin to flash simultaneously, calibration is complete.



If GPS Hold or any of the GPS functions (ie Return to Home, Headless mode, Follow Me mode, etc) are unstable, manually calibrate the compass by following the below procedure.

- 1) Hold the left stick to the left side of its socket and rapidly wiggle the right stick from left to right continuously until "Calib compass 1" appears on the screen. All 4 LED indicators should be flashing red in a clockwise pattern.
- 2) Hold the aircraft parallel to the ground and rotate the X4 clockwise on the horizontal plane until the LCD screen says "Calib compass 2".
- 3) Point the X4 nose down (the aircraft should be perpendicular to the ground) and rotate it clockwise until "Calib compass 2" disappears.
- 4) When the "Calib compass 2" disappears from the screen and the LEDs begin to flash simultaneously, calibration is complete.

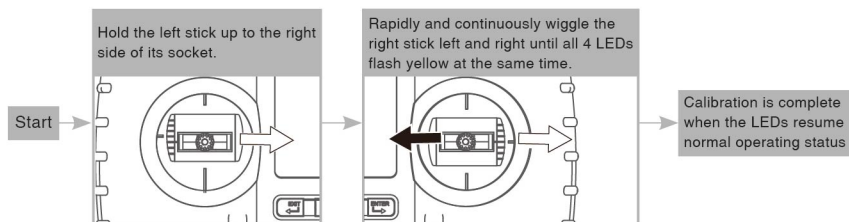


- The compass is susceptible to interference by other electronic equipment, magnetic interference and metal, which can lead to erratic behavior and loss of control. Regular calibration helps keep the compass and its readings accurate.
- Do not calibrate the compass in a strong magnetic field. Do not carry ferromagnetic materials with you while calibrating the compass, such as keys, cell phones, etc.

(3) Horizontal calibration (also known as Gyro calibration)

Horizontal calibration is required when the quadcopter drifts on the horizontal plane during flight. When this happens, land the aircraft and disarm its motors.

Place the aircraft on a completely flat surface and then follow the below calibration procedure. Hold the left stick to the right side of its socket. Rapidly wiggle the right stick left and right continuously until all 4 LEDs slowly flash yellow. Calibration is complete when all 4 LED indicators stop flashing. It is recommended that users wait for 15-20 seconds after the calibration is completed before flying again.

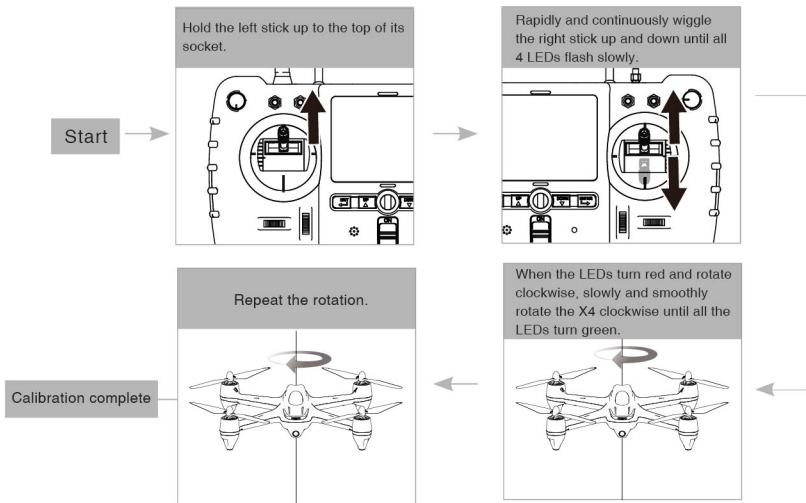


- When using the horizontal calibration, please ensure that the aircraft is on a completely flat surface. Do not move the aircraft or calibrate on an uneven/tilted surface, or there will be errors.

(4) Rotation calibration (formerly known as inertial sensor calibration)

If the aircraft drifts while rotating in flight, perform a rotation calibration by following the below procedure.

- 1) Hold the left stick up to the top of its socket. Rapidly and continuously wiggle the right stick up and down until all 4 LEDs flash slowly. Make sure that the quad is on a completely flat and smooth surface; place a small piece of paper under each foot.
- 2) When all the 4 LED indicators flash in a clockwise pattern, slowly and smoothly rotate the X4 clockwise until all the LEDs turn green. Keep the copter's feet on the surface and on the pieces of paper.
- 3) The 4 LED indicators will again flash clockwise; repeat step 2. If the quad requests a third rotation, restart the quad and start from step 1. Take care not to lift or jolt the quad while calibrating it. Calibration is complete when the 4 LED indicators stop flashing.



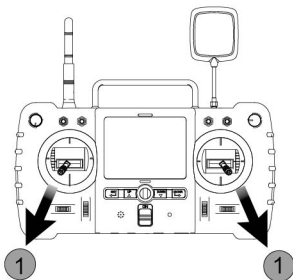
(5) Arming and disarming motors

Arming/starting motors

Simultaneously pull the transmitter joysticks diagonally down-out to arm the motors (as shown in the below figure).


Disarming/stopping motors

Pull the throttle joystick all the way down until the copter has completed its descent on the ground. Simultaneously pull the transmitter joysticks diagonally down-out to disarm the motors (as shown in the below figure).

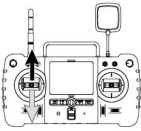


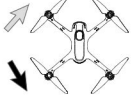

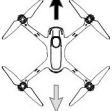

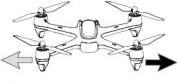


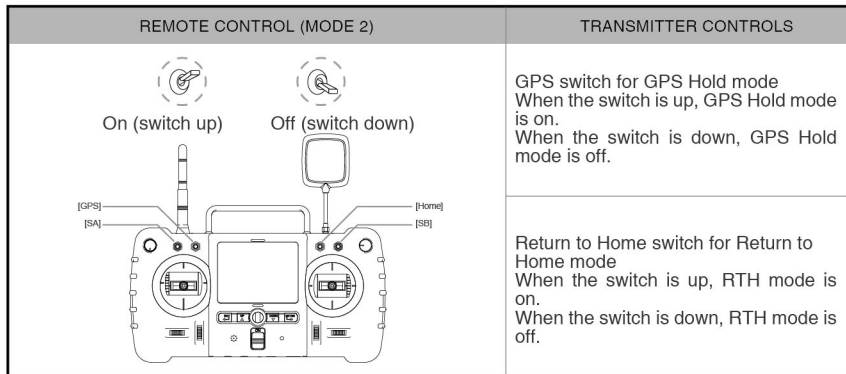
(6) Basic flight operation

The remote control is by default set to Mode 2 in factory; this manual will introduce flight operations in Mode 2.

 Transmitter joysticks are self centering and spring loaded: the joysticks will automatically center themselves

Joystick sensitivity: dependent how much and how forcefully each joystick is pulled or pushed away from center point

REMOTE CONTROL (MODE 2)	AIRCRAFT	TRANSMITTER CONTROLS
	<p style="text-align: center;">Ascend</p>  <p style="text-align: center;">Descend</p>	<p>The throttle is used to control the ascent and descent of the aircraft. Push the throttle up and the aircraft ascends. Pull the throttle back and the aircraft descends. When the joystick is centered (unmoving), the aircraft will hold its altitude in the air. The throttle must be pushed upwards beyond center point for the aircraft to completely takeoff from the ground. The harder the throttle is pushed, the faster the aircraft will ascend. Please push the throttle slowly for a gradual lift and to prevent the aircraft from ascending erratically.</p>
	<p style="text-align: center;">Clockwise rotation</p>  <p style="text-align: center;">Counterclockwise rotation</p>	<p>The rudder is used to control the aircraft's rotations. Push the joystick to the left and the aircraft rotates counterclockwise. Push the joystick to the right and the aircraft rotates clockwise. When the joystick is centered (unmoving), the angular velocity of the aircraft is "0°" and the aircraft will not turn. How hard the rudder is pushed will determine the angular velocity of the aircraft's rotation. The harder the rudder is pushed, the faster the aircraft rotates.</p>
	<p style="text-align: center;">Forward</p>  <p style="text-align: center;">Backward</p>	<p>The elevator controls the aircraft's forward and backward movement. Push the joystick forward and the aircraft will tilt and fly forward. Pull the joystick back and the aircraft will tilt and fly backwards. When the joystick is centered (unmoving), the aircraft will hold its altitude in the air. How hard the elevator is pushed will determine the degree of the aircraft's tilt and therefore the velocity of its forward and backward movement. The harder the elevator is pushed, the greater the aircraft's tilt angle and flight speed either forwards or backwards.</p>
	<p style="text-align: center;">Left</p>  <p style="text-align: center;">Right</p>	<p>The aileron controls the aircraft's left and right movement. Push the joystick to the left and the aircraft will tilt and fly leftwards. Pull the joystick to the right and the aircraft will tilt and fly rightwards. When the joystick is centered (unmoving), the aircraft will hold its altitude in the air. How hard the aileron is pushed will determine the degree of the aircraft's tilt and therefore the velocity of its left and right movement. The harder the aileron is pushed, the greater the aircraft's tilt angle and flight speed either leftwards or rightwards.</p>

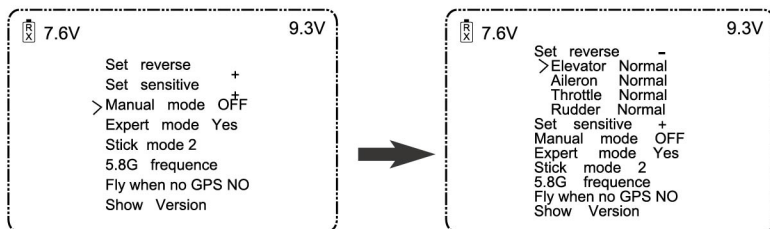


(7) Advanced performance setup

1) Reverse channel setup

If you would like to reverse any of the stick functions, please follow the instructions below. Be aware that this will reverse the control commands.

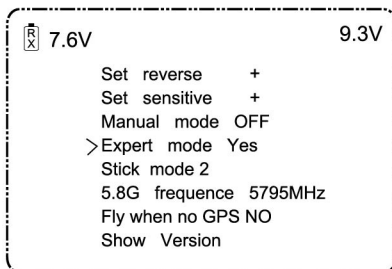
Pull the throttle stick down to the lowest position and long press the 'Enter' key to open the 'Main Menu' interface. Use the Up/Down keys to select 'Set reverse' and use the 'Enter' key to switch between modes. Long press 'Exit' key to save and exit.



2) Sensitivity setup

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

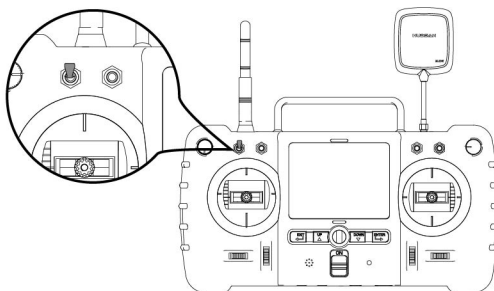
Pull the throttle stick down to the lowest position and long press the 'Enter' key to open the 'Main Menu' interface. Use the Up/Down keys to select 'Set sensitive' and use the 'Enter' key to switch between 'Expert mode' and 'Normal Mode'. Long press 'Exit' key to save and exit.



3) Headless mode

When Headless mode is activated, the aircraft will use whichever direction its head is facing as the default forward position in Headless mode. For example, if the aircraft's head is facing north when you enter Headless mode, you can turn any side of the aircraft due north and still fly forward.

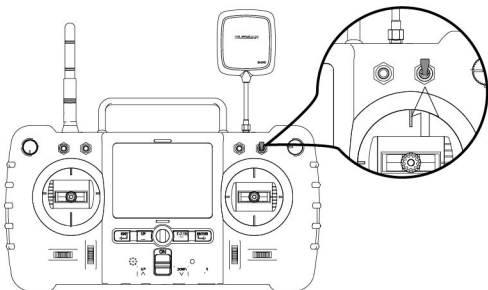
Flip the A switch up to enter Headless mode; flip the A switch down to exit Headless mode. The Head telemetry symbol is red when the aircraft is in Headless mode and green when the aircraft is not.



4) Follow Me mode



Flip the B switch up to enter Follow Me mode; flip the B switch down to exit Follow Me mode. When the switch is up, the screen will say "Follow Mode" in green. The aircraft will turn and face the transmitter. Only the throttle will be active at this time.

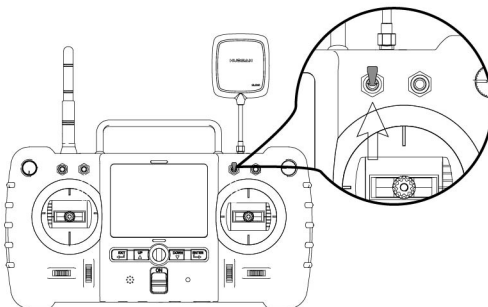


5) Return to Home mode



Entering Return to Home mode

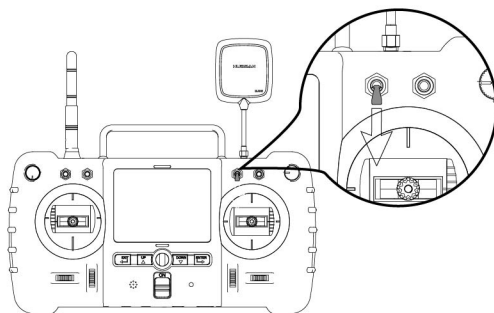
Make sure GPS mode is on (the GPS is up). Then, flip the RTH switch up to activate Return to Home mode. The flight control system will command the aircraft to return to its designated "home" point. Users can either allow the flight system to land the aircraft automatically, or exit Return to Home and land the aircraft manually.



6) Exiting Return to Home mode



Flip the RTH switch down to exit Return to Home mode. Land the aircraft manually.

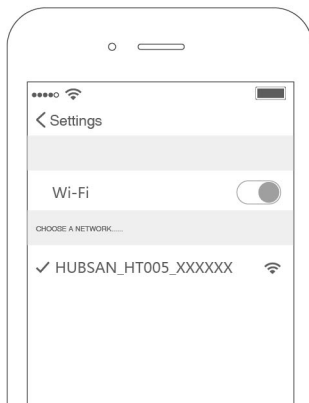


5.5 Flying With The HT005 Relay

1) Download the X-Hubsan APP.

Before using this product, you will need to download the X-Hubsan APP. Users may find download the APP for free from the App Store or from Google Play.

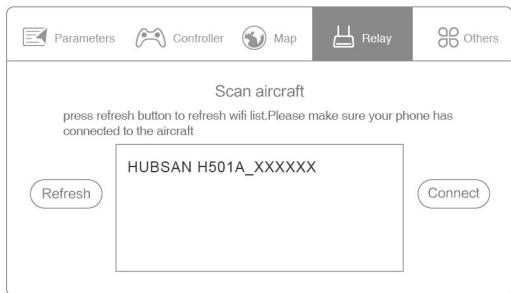
- 2) Power on the HT005. Enter your mobile device's WIFI settings and select the HT005's WIFI signal.



- 3) Run X-Hubsan APP. Enter the "Settings" interface and tap the "Relay" tab. Select "Set relay to connection with the aircraft" to enter the connection settings page.



- 4) Refresh the WIFI list and select the WIFI signal of the aircraft you are using (i.e. HUBSAN-H501A-XXXX). Tap the WIFI signal in question and allow the relay and aircraft to connect. After a successful pairing, you may commence flying with the aircraft in accordance with the APP prompts.



6. FAILSAFE

6.1 Low power failsafe

When the aircraft battery is low, there is likely insufficient power to support the return of the aircraft. Please land the aircraft immediately, otherwise the aircraft will fall and cause damage to the aircraft and surrounding objects. To prevent this, the aircraft flight control will use flight information to determine whether to perform a Return to Home or to land immediately.

6.2 Loss of flight control failsafe

When the flight control connection between the aircraft and transmitter is lost, the aircraft will automatically land or return to where the remote control/transmitter was last located and land there. This can drastically reduce the possibility of the aircraft crashing or being lost.

- Return Home point: The aircraft records the return point only after it has gained 6 or more satellites in GPS Hold mode.

Conditions that may trigger a failsafe

- Transmitter is powered off.
 - The flight distance exceeds the remote control's signal transmission range.
 - There is an obstacle between the remote control and aircraft.
 - The flight control or transmitter signal is interrupted by strong external electronic interference.
- ⊗ - To ensure the successful return of the aircraft if it loses flight control connection, users must confirm that the aircraft has enough GPS satellites to fly safely in GPS mode. Users must also be certain that the flight environment is clear enough for an emergency return and landing.
- If the aircraft's GPS satellites drop below 6 for more than 20 seconds while the X4 is returning to Home Point, the aircraft will automatically descend.
 - The X4 cannot avoid obstacles automatically while in Failsafe mode. Users may set the Return to Home height to avoid running the aircraft into obstructions.

H501A FREQUENTLY ASKED QUESTIONS

1) Aircraft and remote control are not pairing

- ① Check that the aircraft and remote control are both powered on.
- ② Turn off both the aircraft and remote control. Exit the X-Hubsan app if you are using a mobile device. Rebind the aircraft to the remote control by following the rebind directions on page 5 of this manual if you are using a remote control. If you are using a mobile device, start from page 2.

2) Cannot arm motors

- ① Make sure that you have completed compass calibration
- ② Check that the Return to Home switch is pointing down/off
- ③ Check that the joystick channels on the LCD screen are properly centered (if they are not, please use the transmitter's trim buttons to adjust)
- ④ If you are flying indoors, please set the "Fly With No GPS" option on the Main Menu from the default "No" to "Yes".

3) Weak or nonexistent GPS signal/few or no GPS satellites

Make sure that the aircraft is not indoors or between buildings. Please take the aircraft outdoors to receive GPS satellites/signal.

4) No video on the screen or user is experiencing strong video feed interference

- ① Check whether there are strong sources of wireless interference (i.e. WIFI, electricity, radio tower frequencies, etc). If there are any, please change your flight location.
- ② Rebind the copter to the transmitter, as the 5.8 and 2.4 frequencies might be interfering with each other.

5) The aircraft flies erratically in Altitude Hold mode

- ① Check to see if the air pressure sensor reading (Altitude telemetry value) is abnormal when the aircraft is motionless on flat ground. It should read 0 and fluctuate very little.
- ② Check to see if the throttle joystick channel is moving appropriately and properly centered. If not, please calibrate the transmitter sticks and adjust the channel with the corresponding trim button (located on the transmitter).

6) Waypoint Mode does not work

- ① Check that the aircraft has 6 or more satellites
- ② Check that the GPS switch is pointing upwards (on) and the Return to Home switch is pointing down (off).
- ③ Check that all joystick channels onscreen are properly centered.

7) Follow Me mode does not work

- 1) Check that the aircraft is in GPS Hold mode (Follow Me will not work without it)
- 2) Check that the aircraft has 6 or more satellites (Follow Me will not work otherwise)
- 3) Make sure that the all joystick channels are properly centered and that the joysticks are not moved while Follow Me mode is engaged or being engaged. (the aircraft will automatically exit Follow Me mode if a non-throttle joystick is moved or not centered)

8) The aircraft does not return to the home point

When the aircraft takes off, be sure that the aircraft has received 6 or more satellites.

9) The aircraft keeps on losing GPS satellites or GPS satellites drop to 0 erratically

Check to see whether there are sources of high-frequency signal interference around the aircraft (such as high-voltage lines, signal transmission towers, etc).

10) Aircraft/video feed is shaking/shaky

- ① Check if the aircraft propellers are deformed or broken. Please replace them.
- ② Check that all aircraft body screws are firmly in place.
- ③ Check whether any motor shafts are broken. Motors must be replaced if the shafts are broken.

11) Cannot take videos or pictures

- ① Check to see that the SD card is installed in the aircraft prior to power on.
- ② That the SD card is Class 10 or higher, less than 64GB of storage and formatted to FAT32.

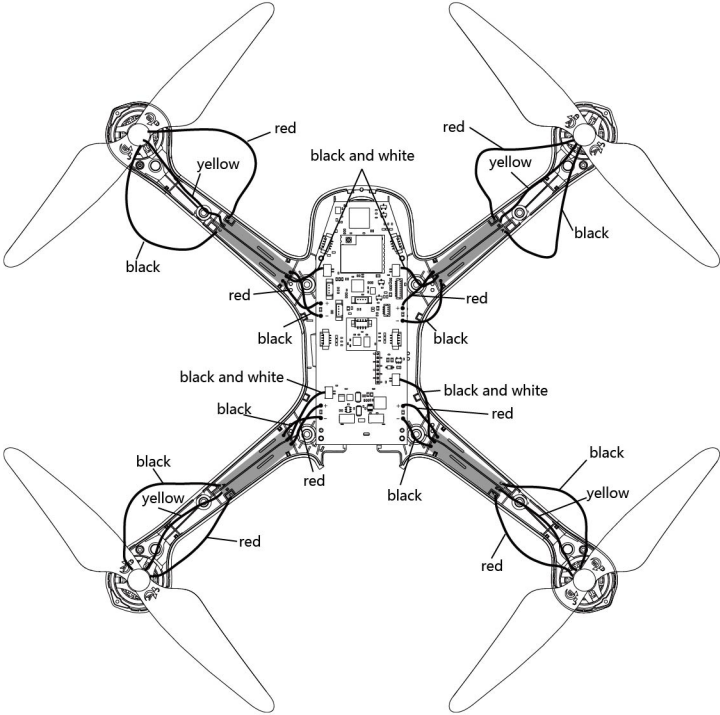
12) Cannot connect to the aircraft's Wi-Fi

- ① Restart the aircraft.
- ② If you want to use the relay and the phone, aircraft are already bound, power the aircraft off and exit the X-Hubsan app. Start from page 4 of this manual to re-connect to the aircraft with the relay.

13) How to retrieve the aircraft when unit has been lost:

Record or take a picture of the aircraft's GPS coordinates on the LCD screen. Then locate the aircraft using the coordinates.

INTERNAL WIRING SCHEMATICS



H501A ACCESSORIES



H501A-01
Body Shell (Black)



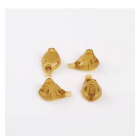
H501S-01
Body Shell (White)



H501S-17
Eye Lampshade



H501S-03
Canopy



H501S-18
Motor LED
Lampshade A/B



H109-04
Rubber Feet



H501S-04
Screw



H501S-05
Propeller A- Gold



H501S-05B
Propeller A- Black



H501S-06
Propeller B- Gold



H501S-06B
Propeller B- Black



H501S-07
Brushless Motor A



H501S-08
Brushless Motor B



H501S-19
ESC



H501C-10 LED
PCBA(Blue/Red)



H501A-02
Flight Control PCBA



H501A-03
5.8G Transmission
Module



H501A-05
GPS Module



H501S-13
Compass Module



H501S-14
Li-Po Battery



H501C-02
Battery Cover



H501S-27
H906A TX



H301S-12
Balance Charger



H501S-16
Propeller Wrench



H501S-25 H901A
TX Li-Po Battery



H501S-26
USB Cable



H501A-04
HT005 Relay



H301S-11
Adapter

Please read the operating instructions carefully before use!



- Never leave units unattended when charging
- Unplug the charging cable immediately after charging
- Propellers may cause injury
- This product is not a toy
- Not suitable for children under 14 years of age

WWW.HUBSAN.COM

Vendor: Shenzhen Hubsan Technology Co., Ltd

Address: 13th Floor, Block C, Shenzhen Software Industrial Base, Xuefu Road, Nanshan District, Shenzhen, Guangdong Province, China

Manufacturer: Dongguan Teng Sheng Industrial Co., Ltd.

Address: Dongguan City, Guangdong Province, Tangxia Tianke Branch City Road, A22

Telephone: 0769-82776166 (China)