



Ages 14+  
Read the instruction manual carefully  
ITEM NO.:H109S  
X4 PRO WITH FPV TRANSMITTER



# THE HUBSAN X4 PRO

REAL TIME FPV

# Hubsan X4 PRO

V1.0 2015.01

Read the instruction manual carefully!

## IMPORTANT SAFETY NOTES

### OPERATION:

Be extremely careful and responsible when use the X4 Pro. There are delicate electronic components, which can be damaged if you crash the X4 Pro or submerge it in water. Do not attempt to fly a damaged X4 Pro. Always inspect propellers for damage and proper tightness. Do not fly with damaged propellers!

### Flight:

- Be responsible for your safety and the safety of others when you fly X4 Pro!
- Do not fly the X4 Pro in a crowded place, it needs plenty of space to operate.
- Do not fly it in bad weather.
- Never try to catch the X4 Pro while it is in flight.
- Only recommended for ages 14+.
- Power off X4 Pro 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 use great caution to protect yourself when near the propellers. The flight system can automatically operate after power on with the transmitter is power on/ off. The high speed rotating propellers are very dangerous.

## READING INSTRUCTION

### SYMBOL EXPLANATION



No operating



Important Notice



Instruction



Explanation, reference

### USAGE ADVICE

Hubsan provides you three files for X4 Pro:

1. *"Disclaimer"*
2. *"Hubsan X4 Pro Instruction Manual"*


View the instruction videos and Disclaimer first, then read the manuals.

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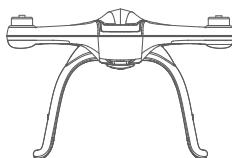
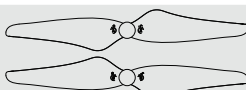
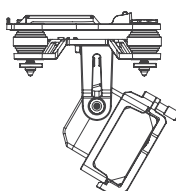

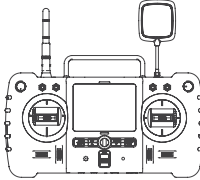
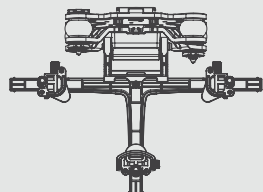


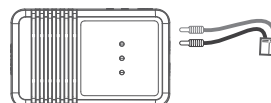
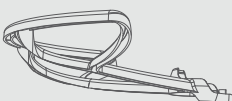
# GENERAL INTRODUCTION


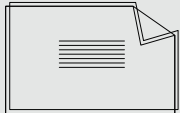
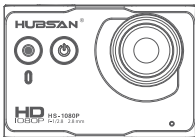
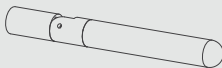

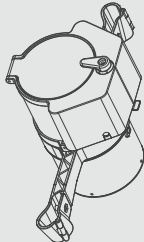
Hubsan X4 Pro is a high-tech aerial video and photography quadcopter. It is equipped with a highly accurate and stable 3 axis gimbal, 1080P HD aerial photography camera, and advanced smart flight control system. The highly-integrated Android transmitter is capable of long distance camera control, video transmission, ground station auto flight, FPV flight, and social network sharing, etc. functions. The Hubsan X4 Pro will help you to easily shoot stable HD videos and photos.

 **FPV:** First Person View provides a realistic inflight cockpit view experience.

## 1. ACCESSORIES INCLUDED

Check all the accessories in the package before use.

S/N	Part Name	Photos	Q'ty	Remarks
1	The X4 Pro		1PC	Equipped with smart flight controller,GPS and compass
2	Propellers		4PCS	Propeller A 2pcs, Propeller B 2pcs
3	1-axis stablized gimbal		1PC	1-axis stablized gimbal
4	Propeller removal wrench		1PC	For removing propellers
5	Transmitter		1PC	FPV Transmitter, equipped with 8 X AA battery(EXCLUDED)
6	Smart Phone Clip		1PC	Hold the smart phone
7	Li-Po battery for X4 Pro		1PC	Insert in the X4 Pro
8	Li-Po Charger Adapter		1PC	110-240V
9	Li-Po Balance charger		1PC	use to recharge the Li-Po battery
10	Propeller guard		4PCS	Ensure the safety of the X4 Pro

11	Micro-USB cable		1PC	To read the camera data
12	User Manuals		4PCS	Disclaimer Hubsan X4 Pro Instruction Manual Camera Instruction Manual Parachute Instruction Manual
13	1080P camera		1 PC	HD camera module
14	Transmitter Antenna		1 PC	5.8 GHz Transmitter Antenna
15	Video glasses		1 PC	Video glasses (Not included. Purchase this optional accessory from Hubsan)
16	Parachute		1PC	Stand-alone system, can help provide some safety after a loss of control. (Not included. Purchase this optional accessory from Hubsan)

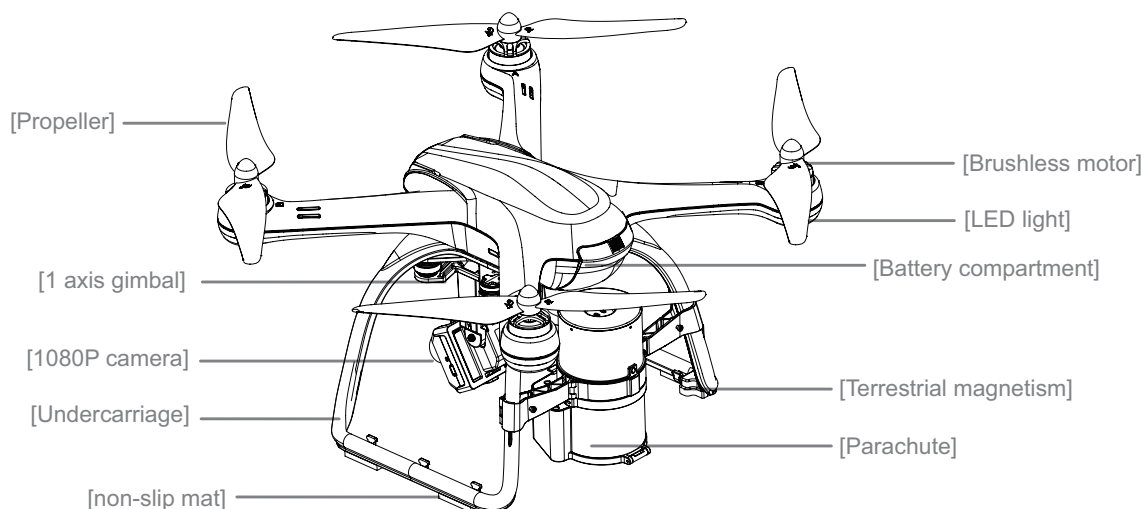
## 2. INTRODUCTION

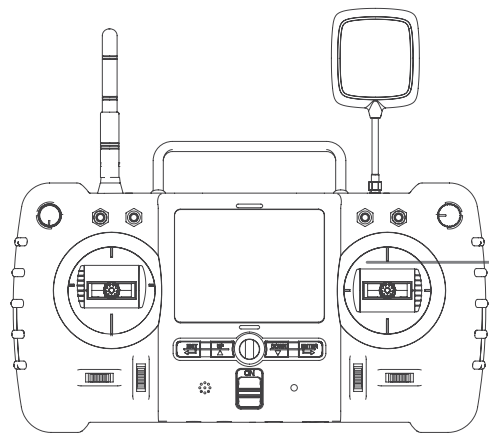
The Hubsan X4 Pro system consists of the quadcopter, camera, gimbal, parachute, propeller guard, power system, flight control system, and radio transmission system.

**Transmitter equipment:** dual data transmission, map and track display, waypoints set/auto-flight, FPV transmitter operates video and picture shooting

**X4 Pro equipment:** 3-axis gimbal, camera, power system (brushless motors and propellers), parachute, propeller guard

**X4 Pro working Mode:** Altitude Hold Mode, Position-hold Mode, Waypoint Mode, RTH Mode, Headless Mode





FPV Transmitter, equipped with 8 X AA battery(EXCLUDED)

## PREPARATIONS FOR USE

Thanks for buying HUBSAN products!

### 1 PREPARE THE LI-PO BATTERY

Make sure the following equipment is fully-charged before flight.

EQUIPMENT	SUPPLIED POWER
Camera	3.7 V 650mAh rechargeable Li-Po battery
X4 Pro with gimbal	11.1V 7000mAh rechargeable Li-Po battery
Parachute	3.7 V 380mAh rechargeable Li-Po battery

#### 1.1 LI-PO BATTERY IN THE X4 PRO

The X4 Pro is equipped with a 11.1V, 3 cells, 7000mAh rechargeable Li-Po battery. Always charge the Li-Po battery with Hubsan provided charger.

##### BATTERY SPECIFICATIONS

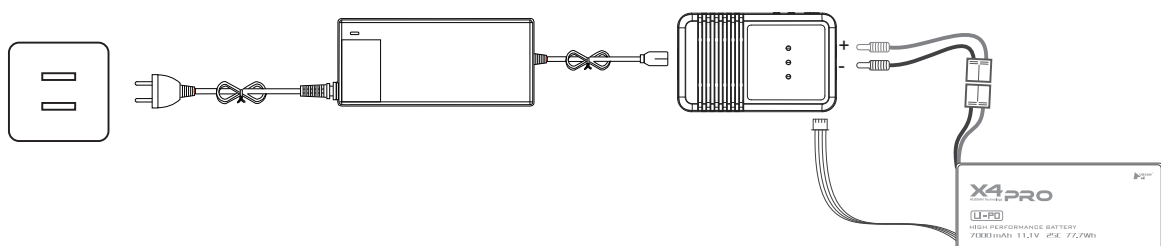
Charging temperature: 0°C~40°C

Discharging temperature: - 20°C~50°C

Charging/ Discharging humidity: < 80%

#### 1.2 CHARGING

Connect battery to balance charger and wall charger, the two LED lights will turn red when charging and turn green when charging is finished. The charging time is about 180 min.



**(1) Overcharge protection**

Overcharging will damage the battery, charging will stop when the battery charge to 12.8V.

**(2) Over-discharge protection**

Over-discharging will damage the battery. The X4 Pro will cut off power when the battery power is 8.4V.

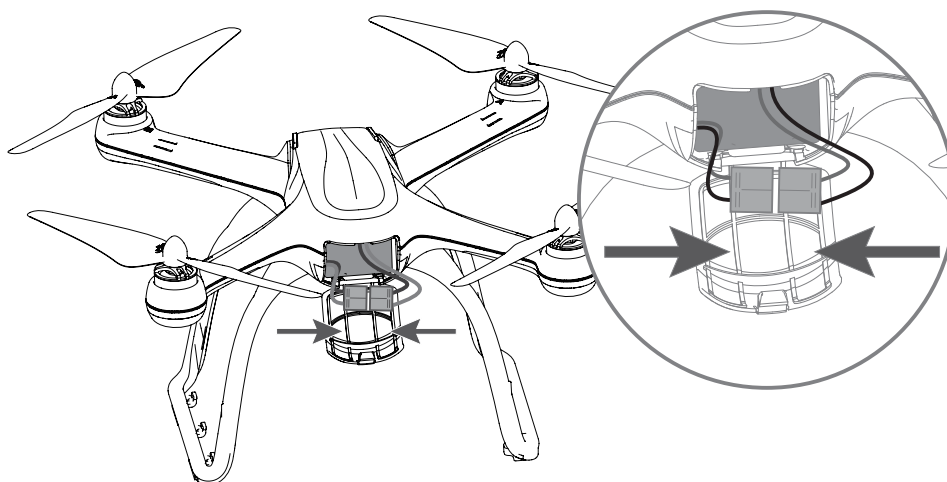
**(3) Short circuit protection**

Short circuit detection. The X4 Pro will power off to protect the battery.

### 1.3 POWER ON/ OFF THE X4 PRO LI-PO BATTERY

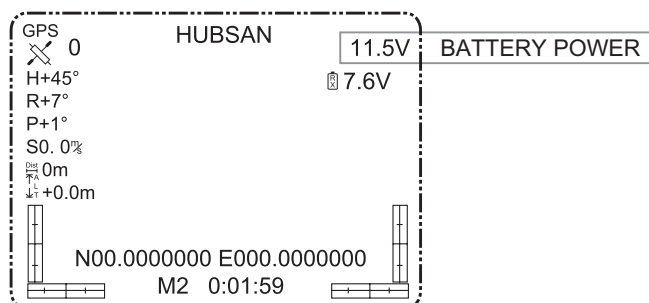
**Power on:** Put the battery into the battery compartment, connect the battery plug with correct polarity. When the X4 Pro is power on, the blue LEDs on X4 Pro will blink in a rotating pattern.

**Power off:** Disconnect the battery connector plug to remove power from the X4 Pro. The LEDs will turn off.



### 1.4 CHECK THE LI-PO BATTERY POWER

After the X4 Pro and the Transmitter finish pairing, the battery power will display on the tablet.



#### Always partially charge your lipo battery before storage.

LiPo batteries retain a charge over a long period at about a 50% or 3.85v per cel storage charge. 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 & Recycling



Lithium-Polymer(LiPo) batteries must not be placed in with household trash. Please contact your environmental or waste agency or the supplier of your model for local regulations and the location of your nearest LiPo battery recycling center.

## 2 SAFETY NOTES

### 2.1 IMPORTANT NOTES

This X4 Pro is not a toy. Any improper use of this product will result in serious injury. Be aware of your personal safety, the safety of others and your surrounding environment. We strongly recommend that beginners learn to fly with proper instruction from more experienced pilots before attempting to fly the X4 Pro for the first time. **It is your responsibility to comply with your country's remote controlled and Unmanned Aerial Vehicle flight regulations!**

### 2.2 LI-PO BATTERY SAFETY NOTES

The X4 Pro is powered by a lithium-polymer(Li-Po) battery. To avoid risk of fire or damage, never recharge your battery while it is inserted in the plane. If you do not plan to fly the plane for a week or more, store the battery approximately 50% charged to maintain battery performance and life.



#### SAFETY ADVISORY NOTICE

##### Lithium-Polymer (LiPo) Batteries

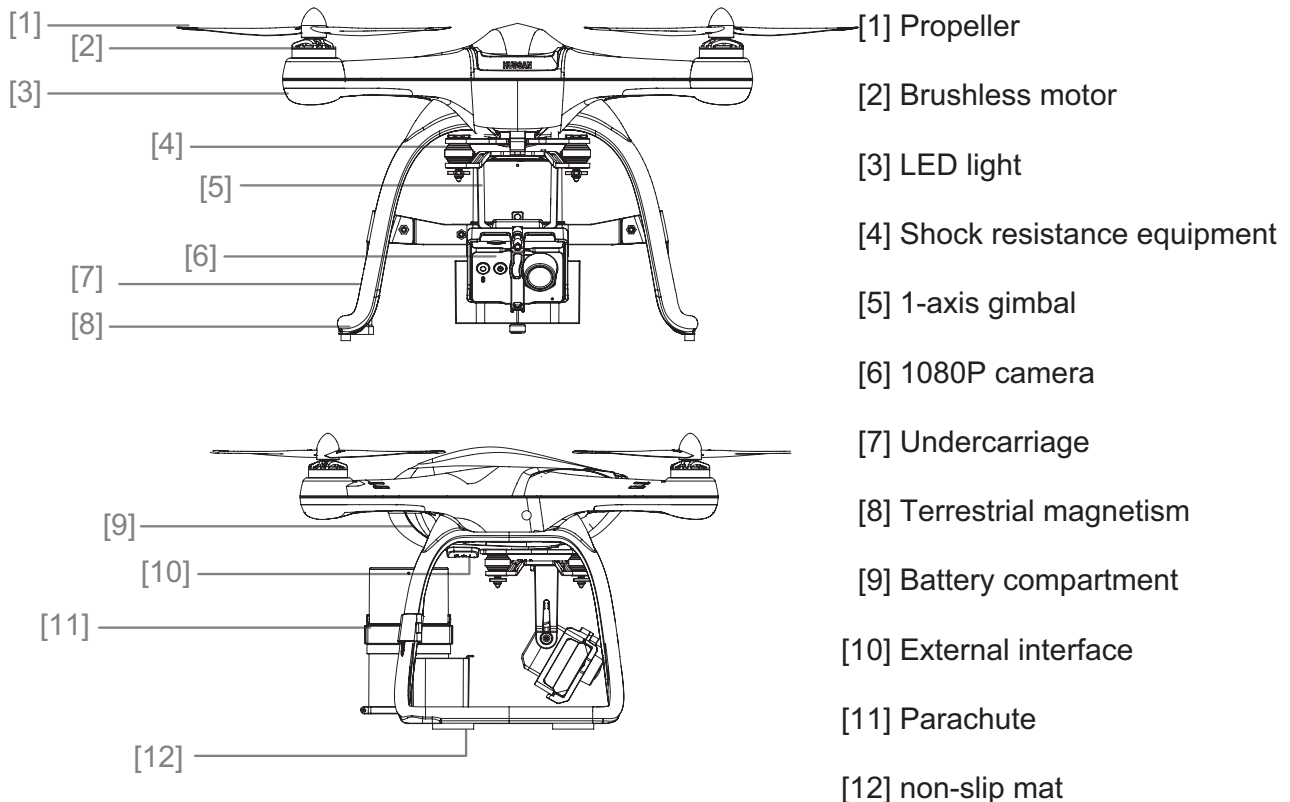
LiPo batteries are different from conventional batteries in that their chemical contents are encased in a relatively lightweight foil packaging. This has the advantage of significantly reducing their weight, but does make them more susceptible to damage if roughly or inappropriately handled. As with 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.
- ☒ Never charge the LiPo battery that has ballooned or swelled .
- ☒ Never charge the LiPo battery that has been punctured or damaged.
- ☒ 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 overcharge 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.
- ☒ 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 crash), 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.



### 3 PREPARE THE X4 PRO

#### 3.1 INTRODUCTION THE X4 PRO



##### 3.1.1 FLIGHT CONTROL SYSTEM INTRODUCTION

Hubsan X4 Pro is easy to operate and very stable, it supports moving forward/backward, left/right, ascending and descending, basic flight performance, and also supports lost control protection, power alarming and IOC functions.

Modules on flight control system	Function
Main control Module	CPU of the flight control system, connects to all the modules for central control processes.
IMU Module	Includes inertial sensor, stabilizes flight; includes a barometer to measure the flight altitude.
GPS & Compass Module	Position hold and Navigation.
LED indicating lights	Indicating the flight control system's condition.

#### 3.2 PREPARE THE CAMERA

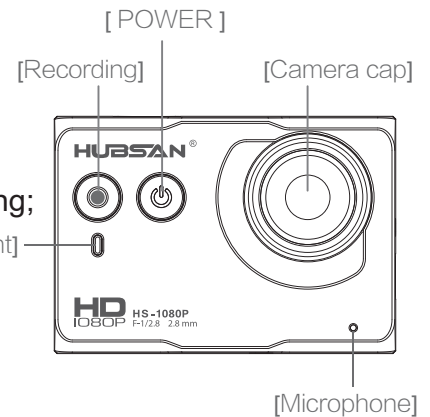
Insert battery into the camera and attach the camera onto the gimbal. Power on the camera. You can press the buttons on the camera to record pictures and videos. You can also use H7000 transmitter for recording and playing the videos.

Camera specifications			
Recording resolution	1920*1080 Full HD	Battery	3.7V 650mAh
Recording frame rate	30FPS	Working temperature	10 ~ +70℃
Video format	MOV	Working humidity	30% ~ 80%
Image Sensor	3 million pixel MJPG	Working power	1.9W
Image pixel	2048*1536 pixel	Standby power	1.33W
Lens format	1/3"	Storage temperature	- 40 ~ +125℃
Lens FOV	170 ° ( MAX )	Storage humidity	30%-90%

### 3.2.1 CAMERA BUTTONS INSTRUCTION

**Power on/off:** Press the power button(<2sec), power on;  
Hold down the power button(≥2sec ), power off.

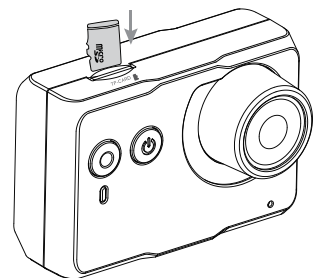
**Video shooting:** Press the video button(<2sec), start recording;  
Hold down the video button(≥2sec), recording stops. [ Indicating light]



### 3.2.2 MICRO-SD CARD

Insert the Micro-SD card into the camera before shooting as the picture shows, always insert/remove the Micro-SD card after power off.

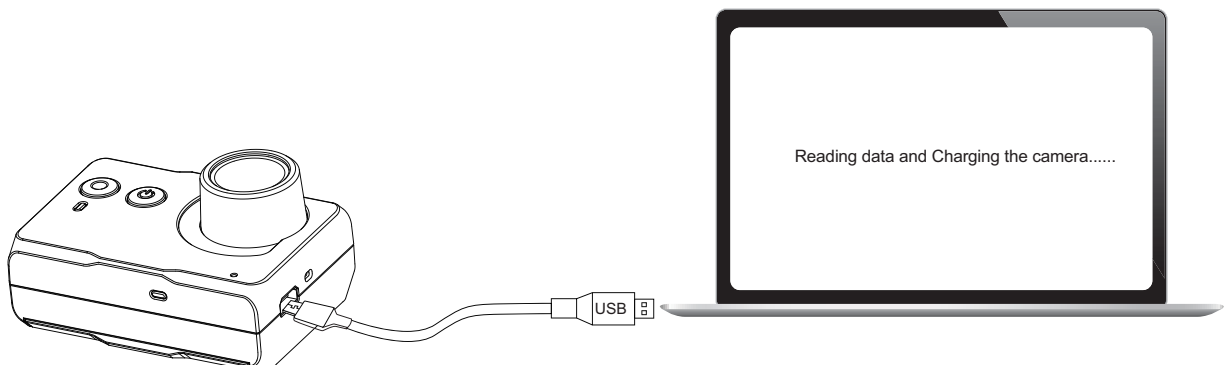
The Micro-SD card is not included. You must source and format a name brand Micro-SD card. The camera supports using a 4-32GB Class 4-6 Micro-SD card. You must format the Micro-SD card before use.



- Do not insert/remove the Micro-SD card when the camera is powered on. Doing so can corrupt the SD card and files.
- Format the SD card on the computer first. You need to select 32KB for the size of the allocation unit, or the card will not work in the camera.

### 3.2.3 READING DATA AND CHARGING THE CAMERA

Use the Micro-USB cable to connect to the PC when the camera is powered on. This will allow you to copy the pictures/videos from the camera and charge the camera at the same time.





- Power on the camera to copy from the SD card. The camera is only charging when the power is off and it is connected to the PC. The camera cannot record video when it is connected to a PC.
- When you remove the camera USB connector from the camera when it is taking video, the camera will continue taking video. If not taking video the camera will automatically power off if USB connector disconnected from the camera.
- The camera will be charging when connected to the X4 Pro or the PC, charging circuit is about 500mAh, the camera battery is 3.7V/ 670mAh.

### 3.2.4 CAMERA LIGHTS

Use a Micro-USB connect to the PC. Power on the camera to copy the pictures/videos from the camera and charge the camera at the same time.

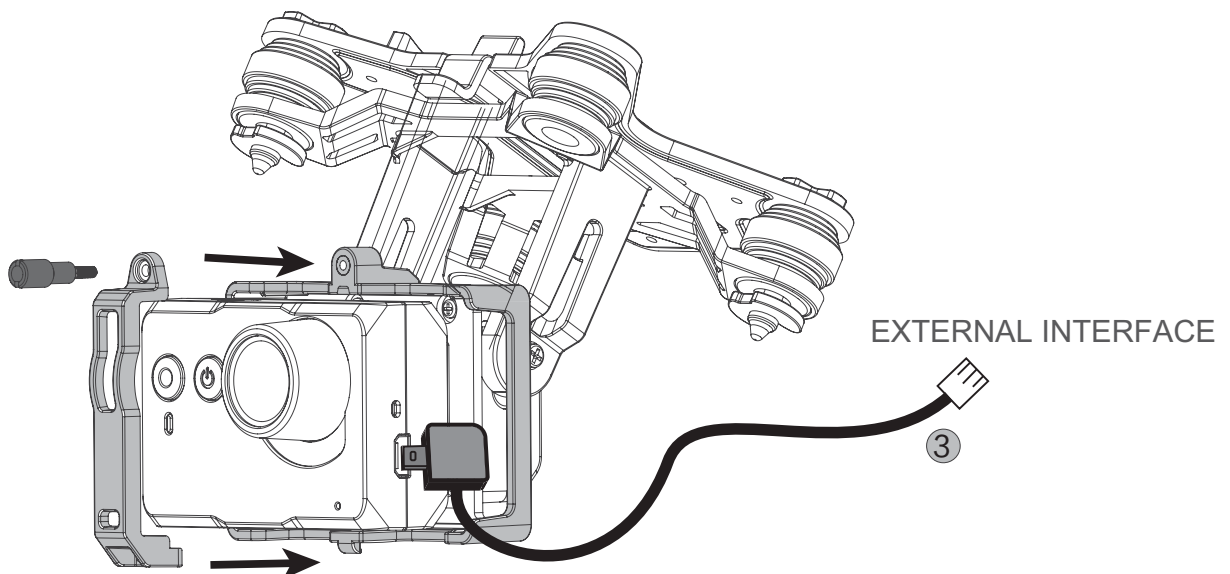
Camera LIGHT	Camera condition
Blue light turns on	Standby
Blue light turns on, red light blinks once every second	Recording
Blue light turns on, red light turns on	Camera module is faulty
Blue light blinks every second	Micro-SD card will be full/ no SD card/ faulty SD card
Blue light blinks quickly	Micro-SD card is full
Red light blinks quickly	Battery power is low

### 2.2.5 INSTALL THE CAMERA

Method: 1. Unscrew the fix set for camera, remove the fix set.

2. Put the camera on the slot(camera facing outside), install the fix set, fix it with screws.

3. Plug the camera data wire into the USB interface, plug the other end into the X4 Pro external interface ( see more details on 2.3.1 ) .



### 3.3 PREPARE THE 1-AXIS STABLE GIMBAL

Features of the gimbal	
Control accuracy	$\pm 0.03^{\circ}$
Control range	Pitch angle: $+90^{\circ} \sim -90^{\circ}$
Stabilized design	Rotate automatically when the X4 Pro tilted to ensure stable shooting

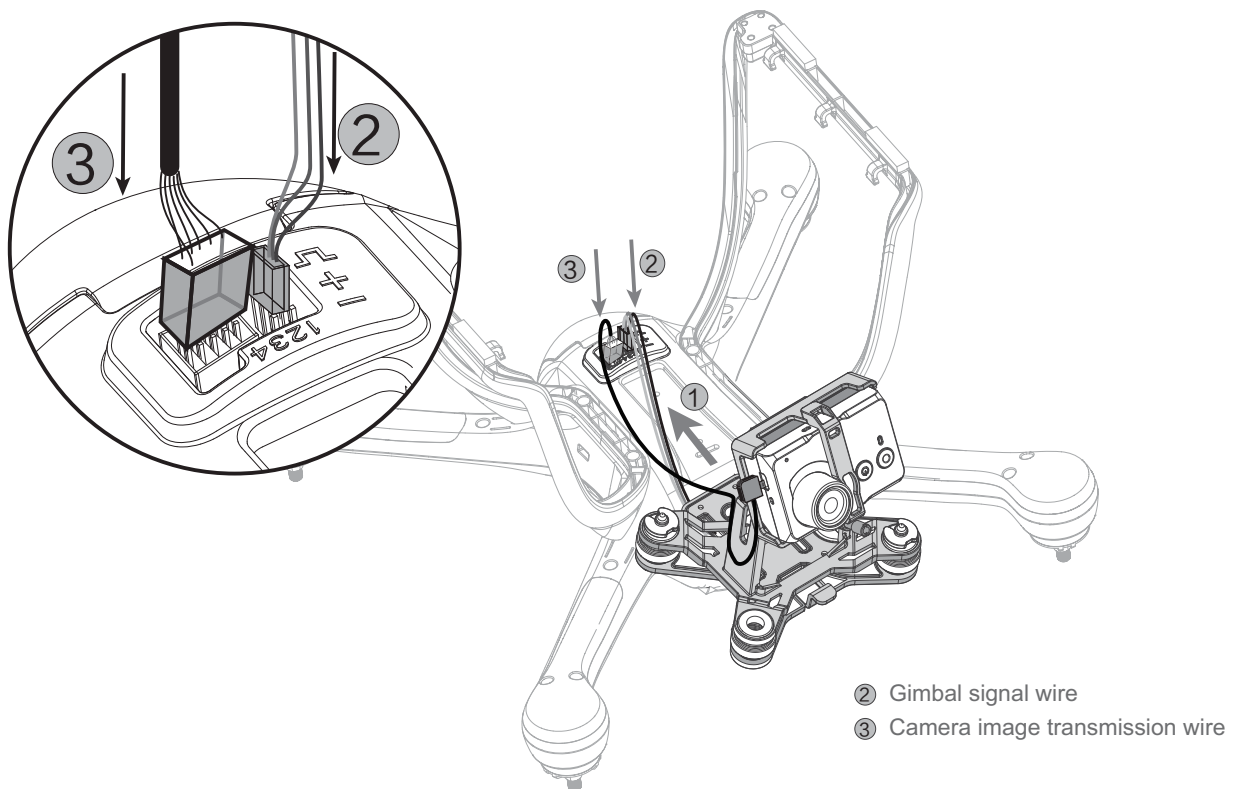
#### 3.3.1 INSTALL THE 1-AXIS GIMBAL

Step 1: Take out the 1-axis gimbal from the box, position and connect the vibration damper with its mate.

Step 2: Insert the gimbal signal wire into the right slot.

Step 3: Insert the camera signal plug into the left slot.

After the installation, power on the X4 Pro on a level surface. The 1-axis gimbal will power on and adjust automatically. The Transmitter's side rotary switch will control the gimbal rotation.



#### 3.3.2 GIMBAL INSPECTION AND ABNORMAL OPERATION

- ⚠ Abnormal gimbal operation can be caused by initializing the power on an unlevel surface, an impact, or from a crash. Put the X4 Pro on a level surface before powering on and flight. Do not cause impact to, or immobilize the gimbal after it is powered on.
- Flying in fog or clouds will cause dew formation which can cause faulty gimbal operation. The gimbal will operate normally again after it is dry.

### 3.4 PREPARE THE PARACHUTE

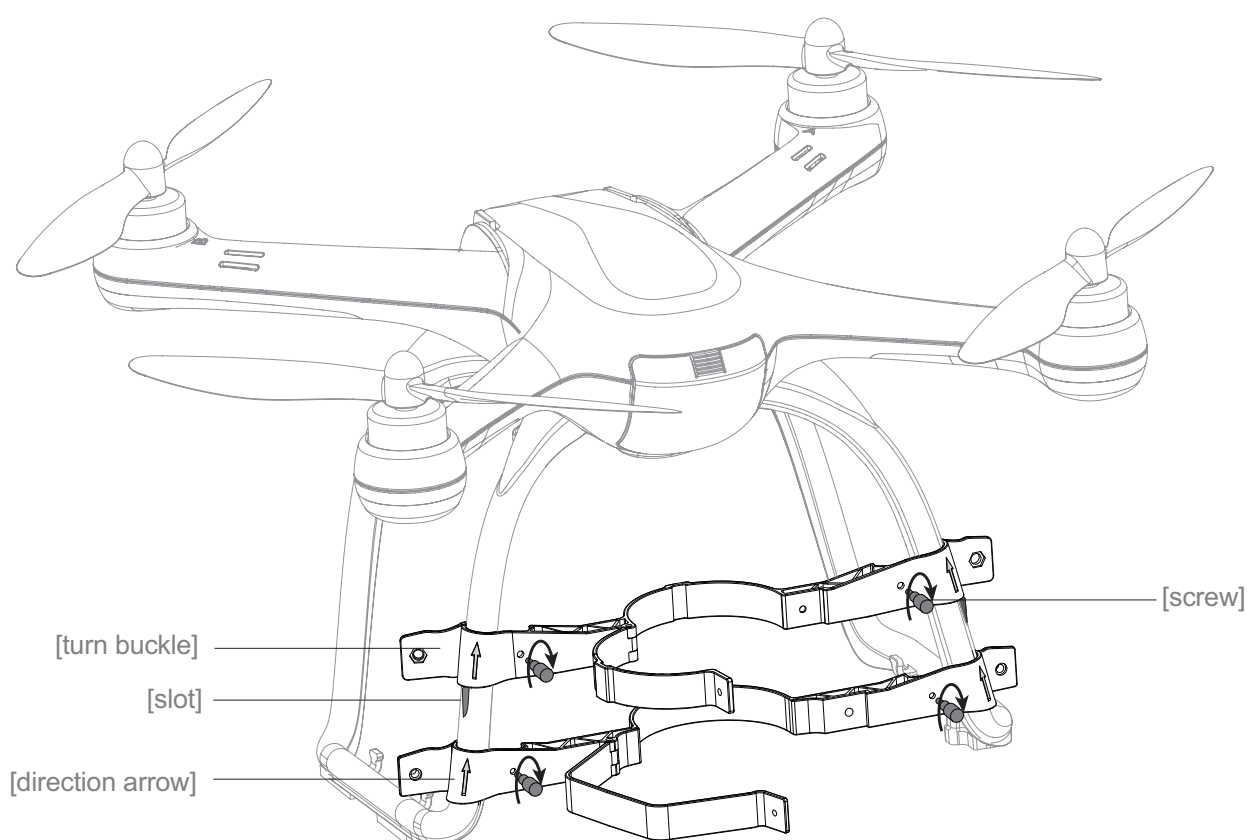
Refer to THE *PARACHUTE INSTRUCTION MANUAL*

The Hubsan X4 Pro has an optional automatic parachute system. The parachute is self-powered which means even when the X4 Pro Li-Po battery power is low, the parachute will still work. There is a sensor inside the parachute system that detects when the X4 Pro goes into an abnormal attitude and then immediately commands the parachute to open. Potentially the X4 Pro can then land safely and avoid causing damages.

#### 3.4.1 INSTALL THE PARACHUTE SYSTEM (OPTIONAL PURCHASE FROM HUBSAN)

Step 1: Install the bracket:

Take the parachute set from the box, remove the screws from the bracket and open the buckle. Make sure the direction of the bracket is up as the arrows show. Put the bracket onto the landing gear until it is positioned in the slot. Tighten the screws to the brackets as the picture shows.

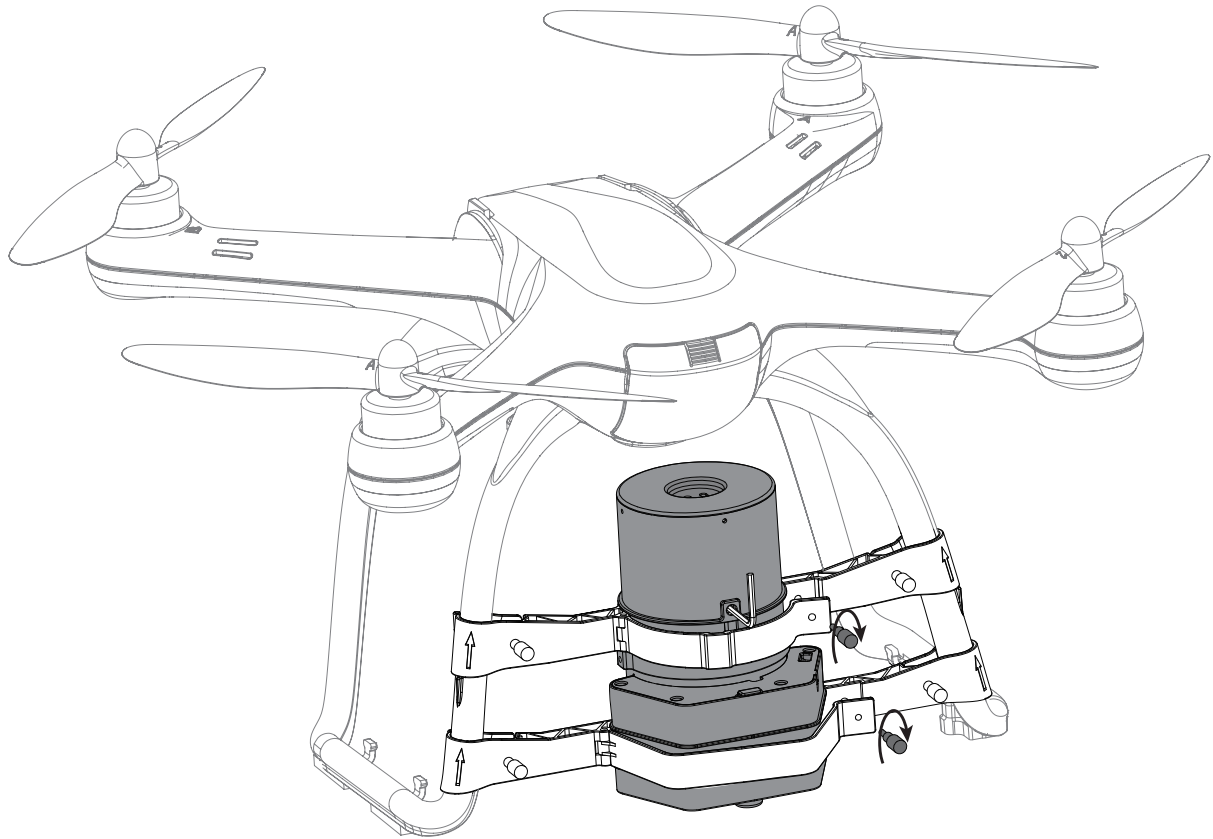


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- ⚠ • Pay attention to the direction of brackets. Do not install them incorrectly. The arrow on the brackets should be up!
- Make sure the brackets are in the slot position before tightening the screws, or the parachute system will be unstable during flight.
-

Step 2: Install the parachute canister:

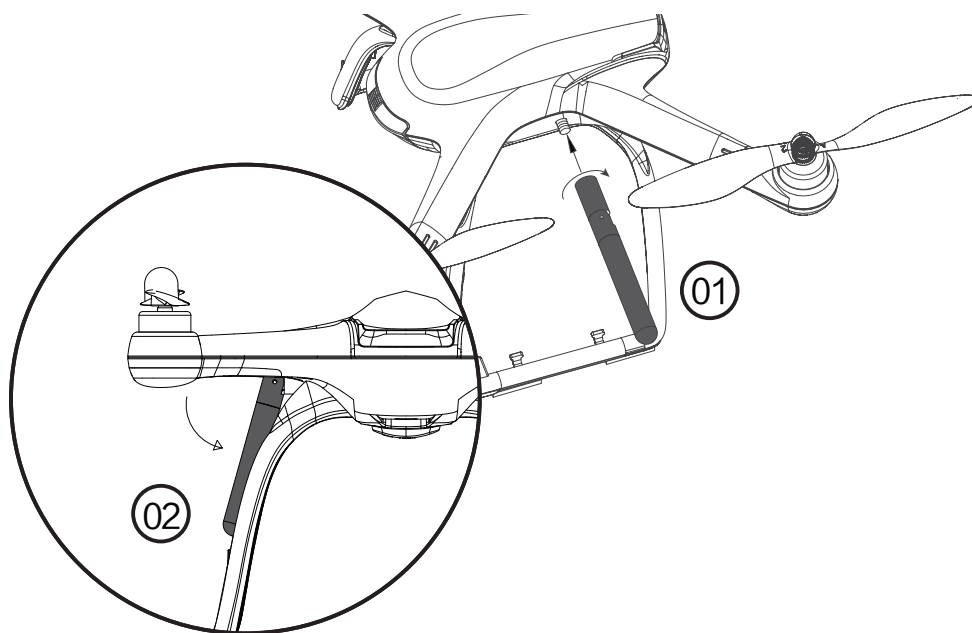
Position the parachute canister into the brackets and tighten the screws.

After the parachute set is positioned, open the middle screws to re-install the parachute cloth.  
(Refer to the Parachute Instruction Manual for more information)



### 3.5 INSTALL 5.8 GHZ TRANSMITTER ANTENNA


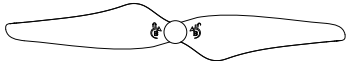
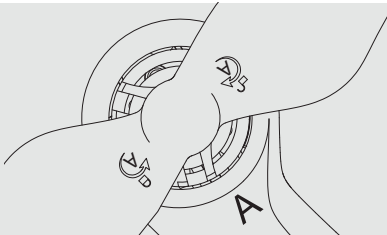
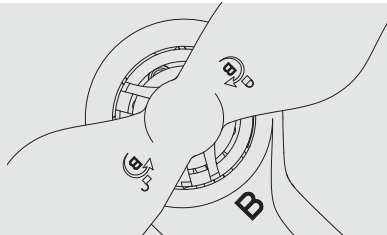


Method: 1) aim to the antenna connector on the X4 Pro, fasten it in clockwise direction;  
2) make sure the antenna is straight and in line with the undercarriage.



### 3.6 PREPARE THE PROPELLER SET

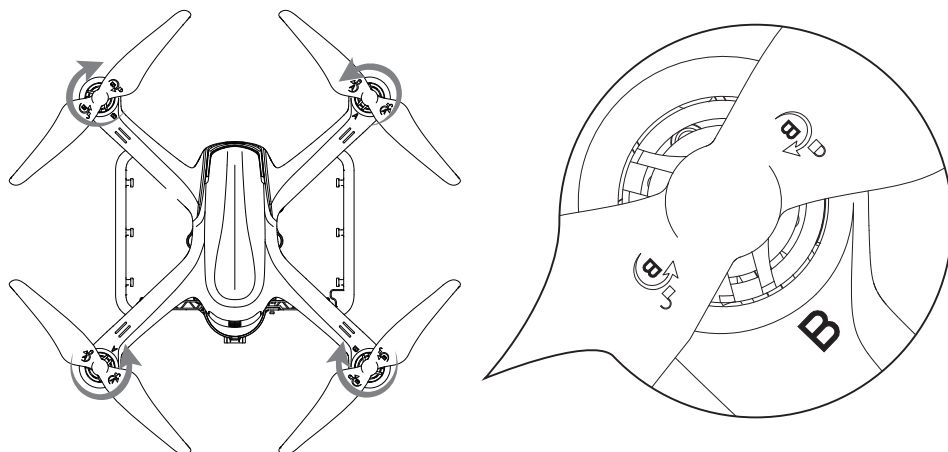
Hubsan X4 Pro equipped with 9 inch propellers--black and grey colors. The propellers are easily damaged. Please purchase spare propellers from Hubsan.

#### 3.6.1 INTRODUCTION

	propeller A	propeller B
Diagram		
Installation Position		
Symbol explanation	 LOCK: In this direction, tighten the propeller onto the motor shaft  UNLOCK: In this direction, remove the propeller from the motor shaft	

#### 3.6.2 METHOD

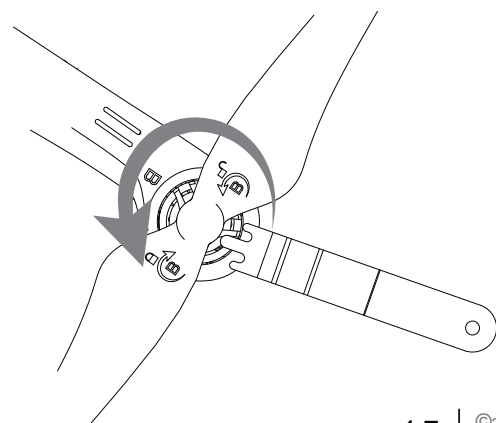
Take out the 4 propellers. Install them hand-tight onto the proper A and B motor shafts.



- ⚠ • The propellers are designed to automatically tighten up, do not screw it too tight. Do not use any type of screw glue.
- Make sure the black and grey propellers are installed correctly. It will not fly if the propellers are installed wrong.
- Wear gloves when installing the propellers to avoid injury. The propellers are thin and sharp.

#### 3.6.3 REMOVE PROPELLER

Hold the motor with the Propeller removal wrench, rotate the propellers in unlock direction to remove the propeller.



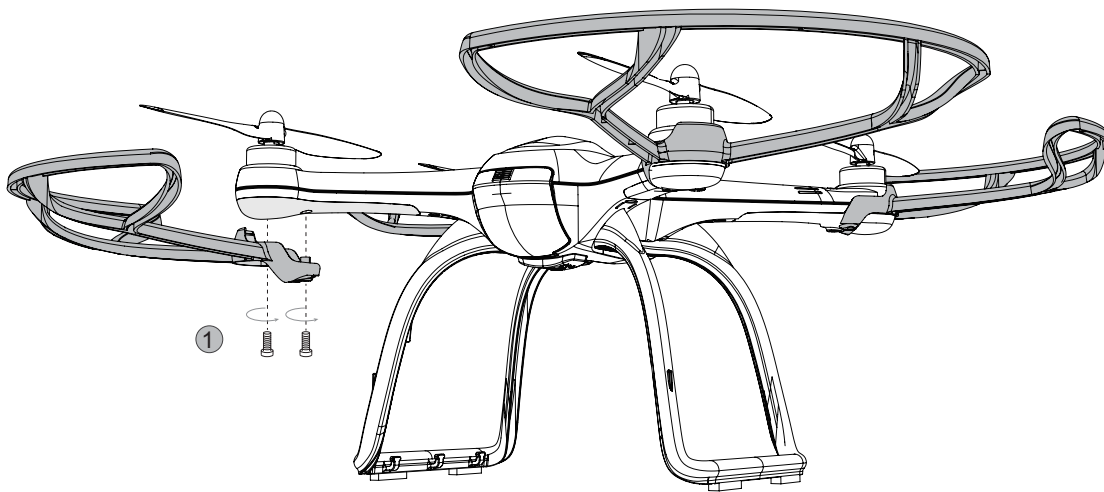


- ⚠ Check that the propellers are correctly installed and tight before every flight.
- Check to see that the propellers are in good condition. Replace the propellers if they are broken, bent, nicked or chipped.
- Do not touch or be close to spinning propellers or motors to avoid injuries.
- Always use Hubsan propellers to ensure best flight experience.

## 3.6.4 PREPARE THE PROPELLER GUARD

For beginners, we recommend that using the Hubsan X4 Propeller Guard to enhance flying safety. The Propeller Guard is optional.

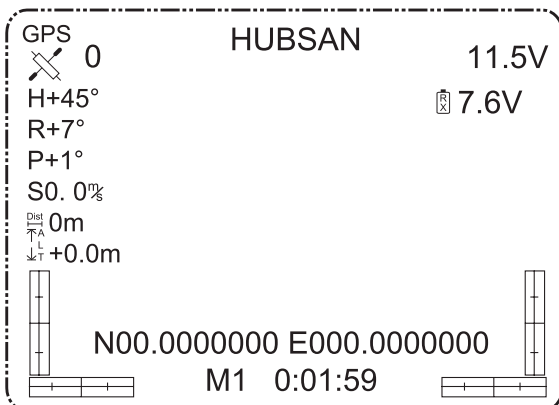
Method : Fasten the screws to install the propeller guard as the below picture shows.



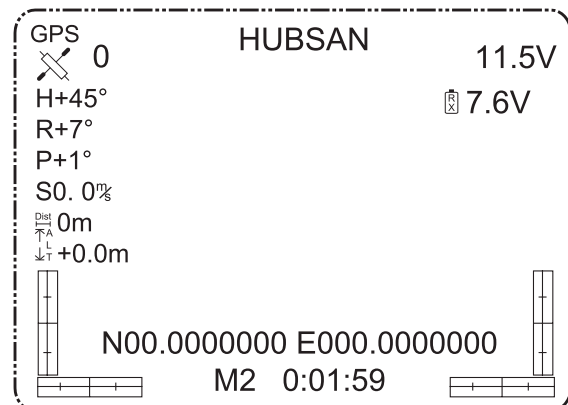
## 4 PREPARE THE 2.4GHZ & 5.8GHZ TRANSMITTER

### 4.1 INTRODUCTION AND FUNCTIONS

#### 4.1.1 MAIN MENU



MODE 1



MODE 2