Catalog

Disclaimer

Please read this disclaimer carefully and follow instructions on assembly and calibration contained in this manual. By using our product, you hereby agree to this disclaimer and signify that you have read the entire manual thoroughly.

- THIS PRODUCT IS NOT SUITABLE FOR PEOPLE UNDER THE AGE OF 18.
- This product is not a toy! It is a complicated combination of mechanics, electronics, aerodynamics and high-frequency radio technologies. Users should strictly obey safety operation specification on aerial model and follow steps illustrated in the manual to install and calibrate the product. Quanum takes no responsibility for any direct or indirect damage(s) or injuries caused by improper installation, calibration and operation.
- Quanum takes no responsibility for any direct or indirect damage(s) or injuries caused by installing/calibrating/flying this product when users are in situations including but not limited like drunk, taking drugs, dizziness, fatigue or any other cases no matter mentally or physically that would impair your ability.
- Quanum takes no responsibility for any direct or indirect damage(s) or injuries caused by flying this product in inappropriate whether like windy(no more than gentle wind), rainy, snow, hail, lightning, earthquake, tsunami and other natural disasters
- Quanum takes no responsibility for any direct or indirect damage(s) or injuries caused by using this product in inappropriate area like magnetic or radio interference area, government regulated no-fly zone or any other not permitted public or private areas.
- Quanum takes no responsibility for any direct or indirect damage(s) or injuries caused by using Quanum product assembled any other non-original Quanum parts, uncompleted Quanum product and Quanum product in aging or erosion conditions.
- If any questions or problems occurred before, during, after using Quanum products, please contact local distributor/seller or Quanum customer service for answer or assistance. Quanum takes no responsibility for any direct or indirect damage(s) or injuries caused by customer’s improper operation or subjective misjudgment.
- Any other losses that are not under Quanum’s liability.

Spare Parts

- Quanum QFX Flight Controller

  Quanum QFX Flight Controller connects ESC, Radio Set and other equipments. The IMU includes 3 axis accelerometer and 3 axes Gyro and barometer, which can get the Real-time Stability Augmentation, position hold, precision hold, altitude hold.

- Power Module function

  Stable 5V U BEC power module is designed for Quanum QFX. It provides the power for the complete controlling system and indicates the controlling system condition. The power module integrates the bicolor LED with the high light, and it can indicate the flying status at the day.

- GPS Compass Module

  After Compass Module connect with GPS module, the aircraft can get the high precision hovering, backtrack for losing control, auto-fly functions

Installation

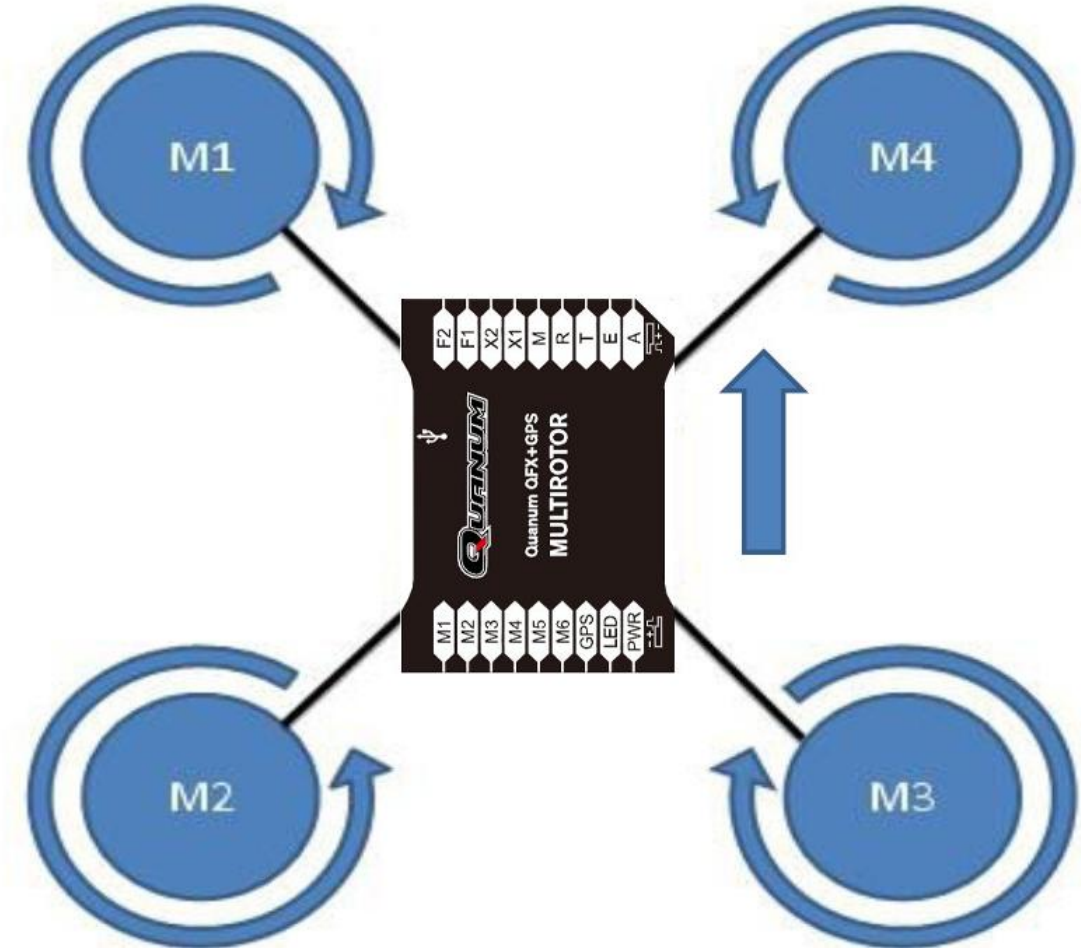
Keep the flight controller in the central position of aircraft when installation. Please make sure that the receiver port should align with front side of aircraft

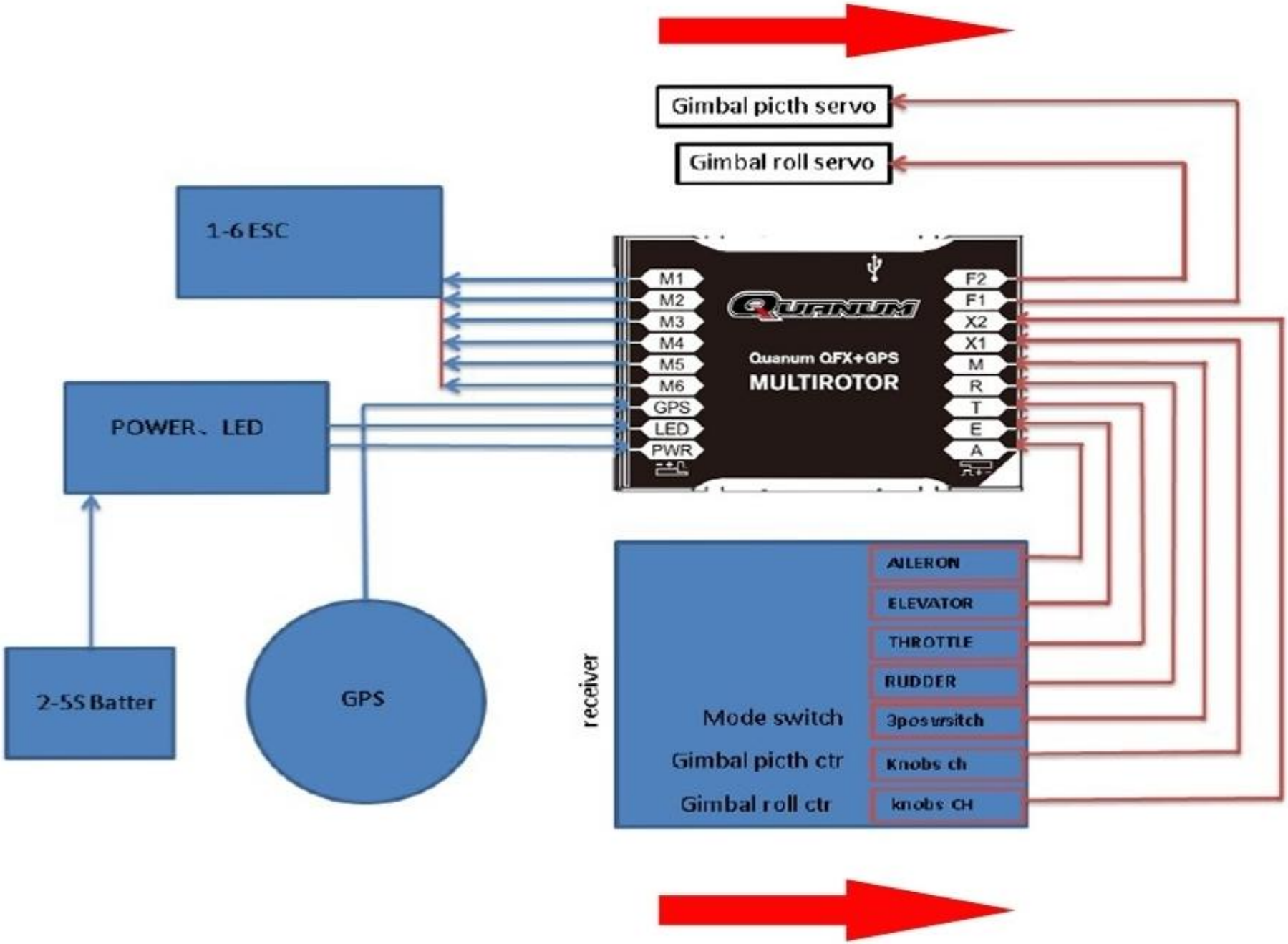
Connect with transmitter. Set the channels and check whether the channels are reverse. Turn off all transmitter mixings

Connect with ESC to the connected port. Adjust all ESC's Throttle Pos to the same

When install the GPS, the triangle arrows on the module should align with front side of aircraft

Please refer to the picture below for the propeller rotated direction and ESC position




Gimbal picth servo
Gimbal roll servo
1-6 ESC
POWER、LED
2-5S Batter
GPS
M1
M2
M3
M4
M5
M6
GPS
LED
PWR
Quanum QFX+GPS
MULTIROTOR
F2
F1
X2
X1
M
R
T
E
A
receiver
AILERON
ELEVATOR
THROTTLE
RUDDER
Mode switch
3pos switch
Gimbal picth ctr
Knobs ch
Gimbal roll ctr
knobs CH

Ready to Fly

1. Calibrate the transmitter and Check whether all channels direction is correct
2. Turn on the transmitter
3. Keep the aircraft on the floor, then connect with battery
4. Keep the aircraft in the state of rest for 10 seconds
5. Switch the flying mode to balance mode, then turn on
6. After turn on, press the aircraft by hand, then speed up the throttle
7. Push the transmitter stick, and check the aircraft condition.
8. If the aircraft can run well, then can try to fly low to ground.

GPS Flying

GPS can make the high precision fixed hover, return to the home when losing control, auto-fly, auto-landing

Calibrate the compass firstly before using GPS（Calibrate the compass）。

1. Note the direction when assembling the GPS (Assemble the GPS module)。
2. Maybe need to modify the Magnetic as the place difference (Modify the Magnetic)
3. Check the LED flashing condition. Let the GPS can receive the signal. (LED indication)

Start up

It will not start up if pushing the throttle sticks directly. Please follow the steps below

1. Pull throttle stick to the lowest point
2. Push direction stick to the left-most point
3. The propellers will start rotating at a slow speed. If it doesn't, please check transmitter channel whether or not is in reverse direction or try to re-calibrate transmitter over again
4. Make sure QFX is stationary during process of starting motors

	
Mode 1	**Mode 2**
Right Throttle	Left Throttle

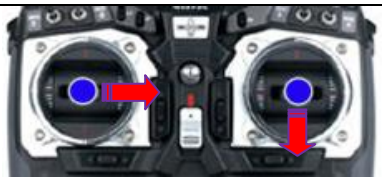
Stop Motor

There are two ways to stop motor.

1. Put throttle stick at the lowest point for 5 seconds ,
2. Execute following stick command, the motors will stop immediately.

   A: Push throttle stick to the lowest point.

   B: Push direction stick to the right-most point.

	
Mode 1	**Mode 2**
Right Throttle	**Left Throttle**

Gyro Reset

As the temperature and external environments, it will cause gyro mid-point drifting, the aircraft will lean to one side when flying, and you need to reset the gyro according to the steps below:

Power on the aircraft

1. Place the aircraft on the ground
2. Push the throttle stick to the peak point
3. Push the direction stick to the right-most point
4. Let the Red LED flash or buzzer sounds
5. Gyro reset finish

	
Mode1 Right Throttle	Mode 2 Left Throttle

Working Mode

Flight controller supports 4 working modes: Manual, Balance, Height Position, and GPS Modes. The current working mode can be distinguished by LED. The factory standard system only can support the balance, height position and GPS modes. If need to start up the other modes, you can adjust from configuration software

3 Position Switch can control the flying modes. The 3 position switch channel on the receiver should connect with M channel on the flight controller

See picture below

		
Transmitter	**Position 1**	**Position 2**

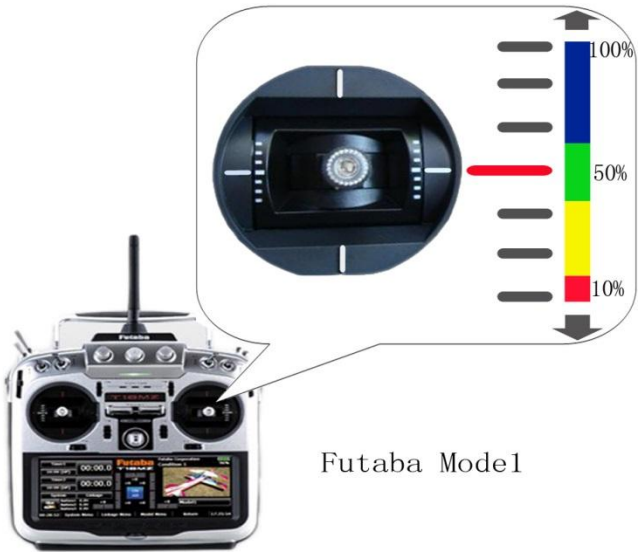
Balance Mode

In balance mode, the aircraft can be auto-stability and auto-balance. The sticks can control the aircraft flying angle. If the stick was in the central position, the aircraft will hover horizontally. But you still need to control the aircraft height by stick.

Manual Mode

In manual mode, the aircraft can keep auto-stability, but cannot keep the auto balance and height. You still need to control them by sticks operation.

Height Mode



In height mode, the aircraft can keep auto-stability, balance and height

The aircraft will rise linearly at a constant speed if the stick was in blue position

The aircraft will lock the height if the stick was in green position

1. The aircraft will descend linearly at a constant speed if the stick was in yellow position
2. The aircraft will descend at a constant speed if the stick was in red position
3. Auto turn off after landing on the floor.

Note:

In height mode, push the throttle stick to the blue position, then the motors start to speed up and fly in the air

In height mode, the aircraft will descend when the throttle stick is in yellow position. After landing or failing to descend, the aircraft will lower the motor’ s rotated speed

GPS Mode

1. In the GPS mode, the aircraft should fly at the empty land. Otherwise the accuracy is affected by high building
2. If 5 or more GPS satellites are found, it will be into the GPS mode. Otherwise the system will be switch over to height mode
   In GPS mode, it can make spot hover, backtrack and auto functions
   GPS has a good flying performance when the height is more than 2M.

Pitch Stick: Push the stick forward, the aircraft will fly forward, push the stick backward, the aircraft will fly backward. Release the stick, the aircraft will hover

Roll Stick: Push the stick to the left, the aircraft will fly to the left. Push the stick to the right, the aircraft will fly to the right. Release the stick, the aircraft will hover

When throttle stick was in the central position, the aircraft will be auto keeping height. When push the stick more than 50% throttle, the aircraft will rise at a constant speed.

(Gps GoHome)Auto Return To Launch Mode

1. In Go-Home Mode, the aircraft will get back to the take-off point automatically
2. In Go-Home mode, the pitch and roll channels will be out of work, but the height and direction can be controlled
3. When the aircraft get back to the fly over the take-off point, it will hover automatically for 5 seconds.
4. When the aircraft get back to the fly over the take-off point, please make sure that the throttle stick is in the central position

Failsafe

If the flight controller is out of control, the aircraft will get back to the take-off point automatically, then auto-land and turn off.

Connect with battery firstly. If 5 or more GPS satellites are found, the current position of aircraft will be saved as home-point

In GPS mode, when throttle stick is changed from >40% to < 10% position, system failsafe function will be triggered.

To trigger system failsafe function, please set the below

1. Set the failsafe mode channel to GPS mode
2. Set the failsafe throttle to below 10%
3. Set all other channels to the central position

Working process of failsafe

1. The aircraft will rise automatically more than 10m height, and then it will start to go home.

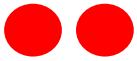
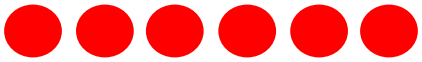
2. When the aircraft get back to the take-off point, it will hover automatically for 5 seconds
3. Land automatically after hover
4. Turn off automatically after landing

LED Indication

Flying Mode and LED

Flying Mode	LED flash	Remark
Manual Mode		Only get the gyro stability
Balance Mode		Keep auto aircarft angle
Height Mode		Auto altitude hold
GPS Mode	 fast flash	Auto position lock(GPS can not be used when red light stop flashing or satellite is not found
Fail-Safe		Keep flash,when out of control

Flying condition and LED

Condition	LED flashing times	Remark
GPS satellite > 4		GPS Signal is not very good.
GPS satellite > 6		GPS Signal is good. Try to GPS flying
GPS satellite > 8		GPS Signal is very good
Low voltage alarm		Low voltage

Low voltage

1. Suggested to assemble the low voltage alarm tester on the battery for better safe flying
2. When low voltage alarm, you should land it immediately, otherwise it will be rollover.
3. If it is in Height mode or GPS mode, the throttle output will be increased automatically (the aircraft will land automatically)
4. When low voltage alarm, the LED will keep flashing, you must land the aircraft as soon as possible. Otherwise it will crash.

Flight Controller Power Output

Power output is 5V/2A. If the connected load is more than 2A, please connect with UBEC

Compass Calibration

Calibrate the compass before the first flight or when flying in a different area. Make sure to keep away from ferromagnetic substance and other electronic equipment when calibrating or flying. If you keep having calibration failure, it might suggest that there is magnetic interference or other ferromagnetic substance, please avoid flying in this area

Need to calibrate the Compass:

1. First time to use the GPS
2. GPS install location has been changed

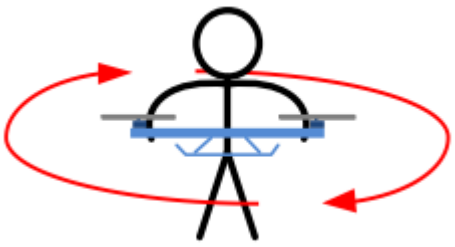
Note

Do not calibrate the compass in the ferromagnetic environment.

When calibrate the compass, please take off the magnets such as key, cell-phone, and other metals

Calibration Process (Refer to the video in the CD)

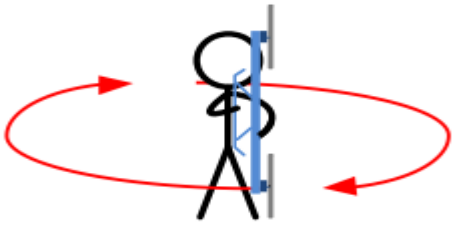
1. Push the throttle stick to the peak point in the " power-off" condition
2. Quickly switch the control mode switches for 6 to 10 times until the red LED start to flash.
3. Red LED single flash means that it is in the horizontal calibration. Please hold your aircraft and rotate it at a constant speed until the Red LED start to twin flash.



Horizontal calibration

4.

Red LED twin flash means that it is in the vertical calibration. Please hold your aircraft and rotate it (its nose is downward) at a constant speed until the RED led stop flash



Vertical Calibration

5. Re-start the flight controller after calibration

Check the compass calibration

Connect the aircraft with computer, open “QuanumTOOLS”, and then check YAW value. When the aircraft nose is to the north, the YAW is close to “0”. When the aircraft nose is to the west, the YAW is close to “90”. If there is a big error, you need to re-calibrate the compass

GPS Module Installation and Magnetic Compensation

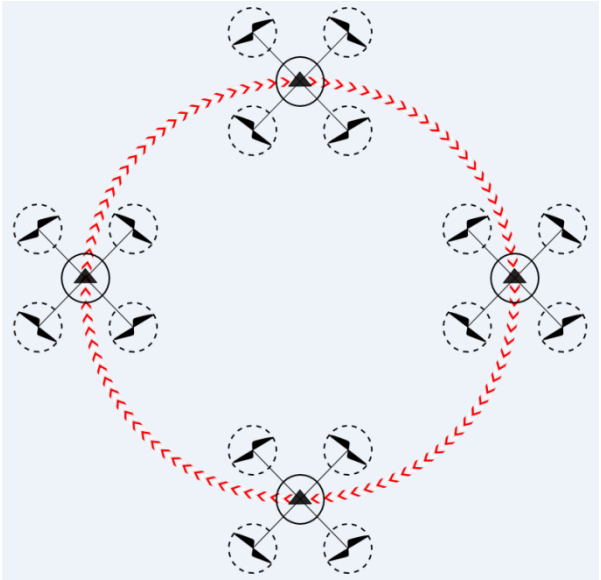
The triangle arrows on the GPS should align with heading direction of aircraft.

You need to calibrate the compass when you first use.

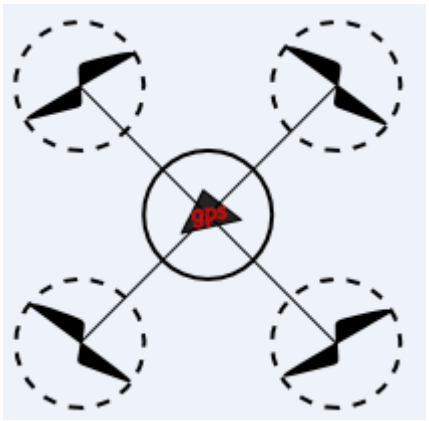
Hovering Circle

If aircraft hovering clockwise, please rotate the GPS module to a certain angle counter-clockwise which should below 30^{o} .

When flying in GPS mode, and the compass calibrate has be done correctly.



if drifting when hovering, you need to adjust the install direction of gps, please referring to the following picture.



(If aircraft hovering clockwise, please rotate the GPS module clockwise to a certain angle according to the previous steps)