Quadcopter
Operation Manual

IMPORTANT :

Radio controlled model

NOT A TOY !

- This high performance model must be assembled and operated according to the instructions.
- May cause serious injury to persons or property if not used responsibly.
- Unsuitable for children under 18 years old.

Index

What's Included?

Package Contents:

1. Assembled Quadcopter
2. 8 Channel 2.4GHz Remote Control
3. DC-DC Charger (may change or remove depended on final configuration for different regions)
4. AC-DC Adaptor (may change or remove depended on final configuration for different regions)
5. 5200Ah 4S LiPo Battery (may change or remove depended on final configuration for different regions)
6. Telemetry Kit
7. OTG Cable
8. Operation Manual.

Basic Function Introduction :

- **Inside the quadcopter :**
  - A flight controller which is powered by a 32 bit MCU.
  - An integrated sensor module including accelerometer, gyro, compass & barometer sensors.
  - A GPS module.
  - Four sets of speed controllers, motors, and foldable self-tighten CW & CCW propellers.
  - Built-in telemetry system
- An 8 Channel radio control system has control range about 1000 meters, (depends on circumstances).
- The 2 control sticks control the 4 Axis (Roll, Pitch, Yaw, Up/Down) flight control. A mode switch near the middle of the bottom of the remote control can change the stick mode between Mode 1 / Mode 2. (Mode 1: right-hand throttle , Mode 2: left-hand throttle)
- A 3-position switch, at the top right corner of the remote control, controls 3 flight modes: GPS Hold (for outdoor), Altitude Hold (no GPS signal/indoor), and Return to "Launch point".

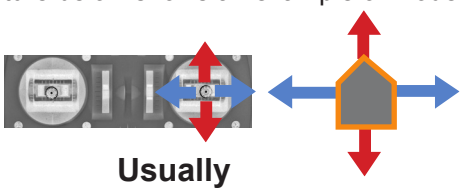
■ GPS hold - When GPS is located, this function will hold the Quadcopter where it is. When “GPS hold” is turned on, the Quadcopter can’t takeoff if the GPS signal is too weak. (Suggest: the wind speed shall be under 4~5 level or lower than 15km/hr)

■ Attitude hold – The Quadcopter will hold the altitude & keep stabilized automatically while not getting any control input from the pilot or fail safe action. Note: the Quadcopter may slight shift in the air by wind or any un-notable foreign force on it. “Attitude hold” is for flying indoor or without GPS located situation. (Suggest: the wind speed shall be under 5 level or lower than 25km/hr)

■ Return to “Launch point” – When the GPS is located, when RTL is activated by the pilot or failsafe, Quad-copter will fly back to the “Launch point” and land. When RTL is activated, if the Quad-copter is lower than safe height 10m, it will pull to 10m and process RTL. (Suggest: the wind speed shall be under 4~5 level or lower than 15km/hr)

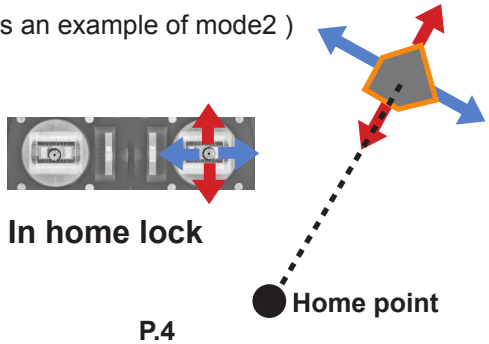
● A 3 position switch, at the top left of the remote control, controls 2 orientation control modes: Normal and Intelligent altitude mode.

■ Normal - As the regular RC flight, the Quad-copter attitude & orientation control is based on the orientation of the Quad-copter’s heading. The orange propellers point to the front. (The picture below shows an example of mode2)



Usually

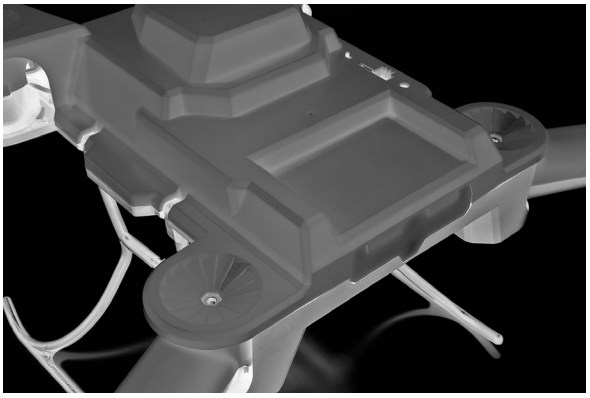
■ Intelligent altitude mode – designed for flight beyond visual range. It uses the vehicle’s position relative to home instead of the vehicle’s initial heading when it was armed. This means no matter where the vehicle is, pulling the pitch back will cause it to return towards home regardless of the vehicle’s actual heading. (The picture below shows an example of mode2)



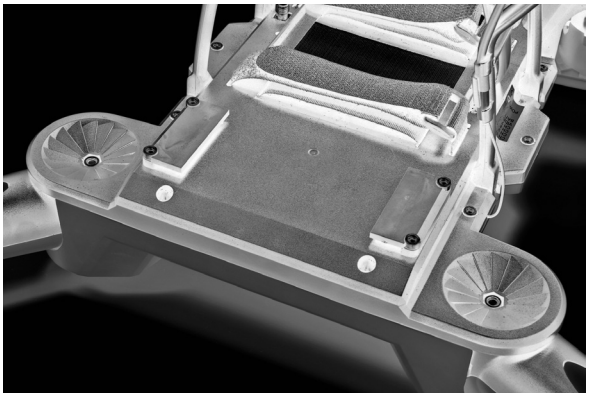
In home lock

Home point

- There is a flat platform on the rear and bottom of the airframe, the optional devices could be attached to the Quad-copter easily. (Optional modules: FPV + gimbal module, offload hook, spot light… etc)

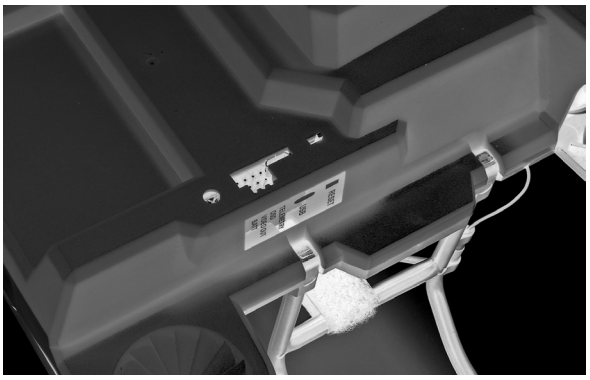


- There are plug pins under & above the Quad-copter, which are for connecting to the Camera gimbal controls, Video in/out, external servos, OSD unit, Video remote control….etc, no modification needed, just plug & play.



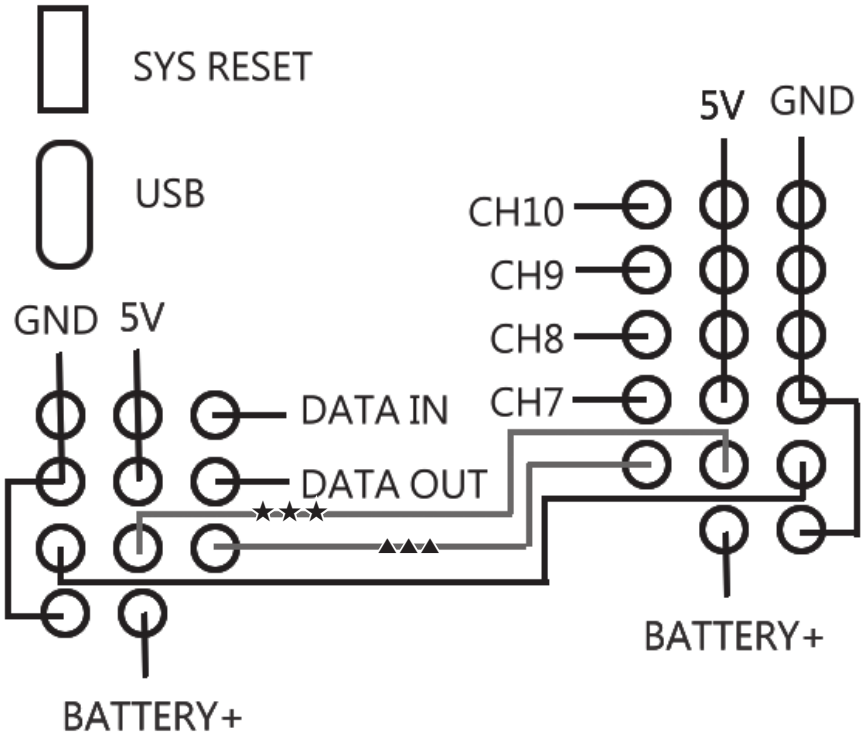
- PC software & USB interface adapter is for connecting to a computer, for updating & setting up.

- There is system reset switch on the top of the airframe, it is easy to rest the flight controller without unplug & plug the power battery.



● Here are other port extensions :

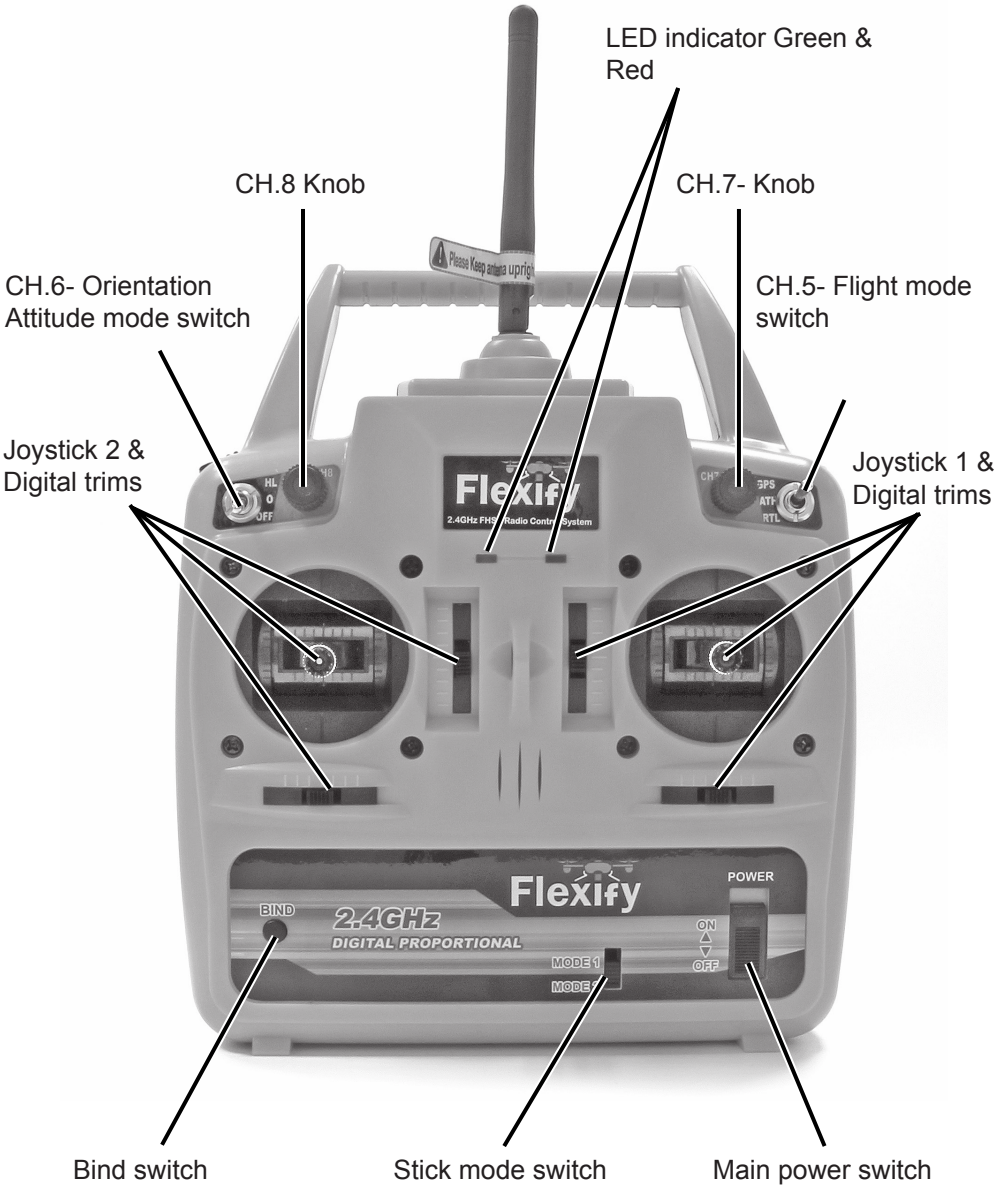
Upper port extensions **Lower port extensions**



1. ▲▲▲: video signal / ★★★ : audio signal
2. CH7: external module control port, connecting to the top right knob on remote control.
3. CH8: external module control port, connecting to the top left knob on remote control.
4. CH9&CH10: default no function.
5. DATA IN&DATA OUT: for connecting OSD system.

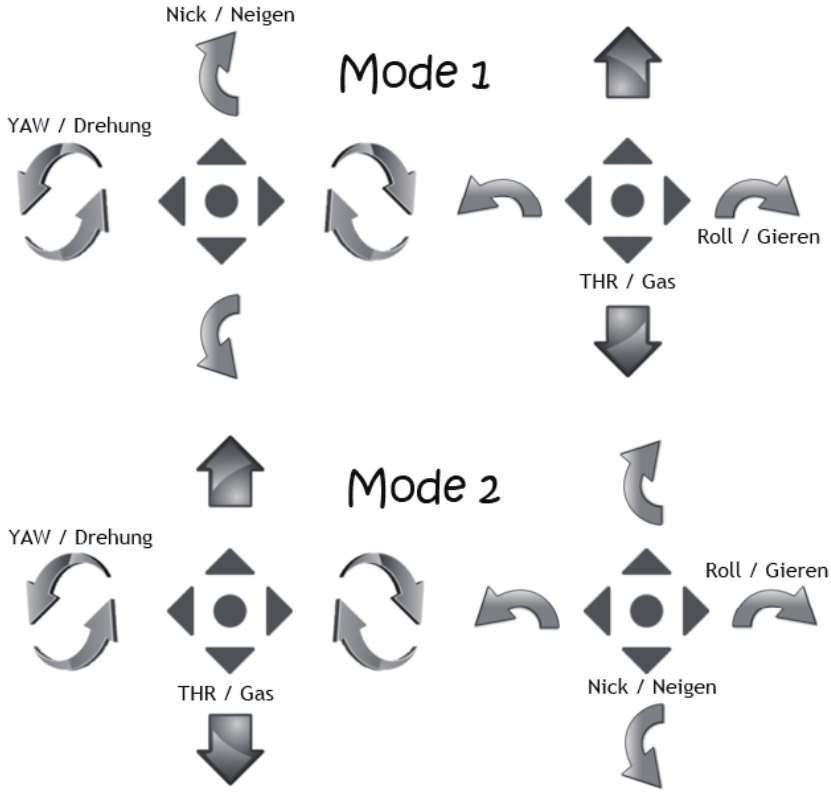
The Remote Control :

Function Description :



Function Description :

1. Specification:
   - Output: <100mW, Meet the FCC, CE, Telec, NCC regulations.
   - Control range: 1000 Meters.
   - Power source: “AA” (UM3) alkaline battery x 4 pieces.
2. Joystick 1 (at right side):
   - Stick Mode 1: Roll, Altitude control.
   - Stick Mode 2: Roll, Pitch control
3. Joystick 2 (at left side):
   - Stick Mode 1: Yaw, Pitch control
   - Stick Mode 2: Yaw, Altitude control.



4. CH. 5 - Flight mode switch:
   - Up: GPS Hold
   - Middle: Altitude Hold
   - Down: Return to “Launch point”
6. CH.7 & 8 Knobs: Control the RC devices connected to CH.7 & 8 port extension at the The Quad-copter bottom.
7. Stick mode switch: Select stick mode 1 or mode 2.
8. Bind switch: Trigger binding function with other multi-copter.
9. Main power switch:
   - Up: Turn on the remote control.
   - Down: Turn off the remote control.
10. LED indicator Green: Bind
11. LED indicator RED: Power
12. Digital trims: trim the middle point of joystick

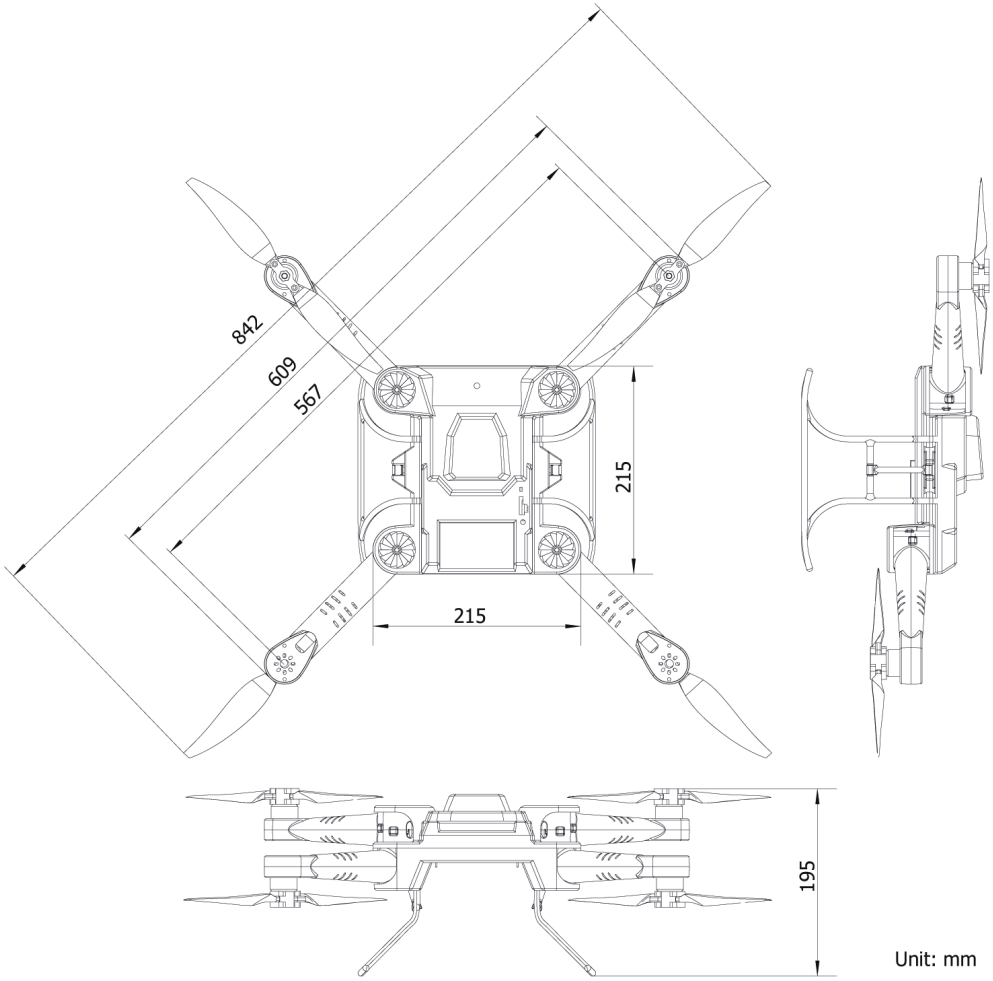
How to achieve the maximum distance?

1. Check if the antenna on the landing gear is vertical to the ground
2. Check if the antenna on remote control is vertical to the sky
3. Check if there is no obstacle between the remote control and the Quad-copter
4. Please avoid the Quad-copter to fly over any radio wave building. ex.: high-voltage tower, radio station, or mobile signal base.

The Quad-copter :

The Quad-copter Specifications :

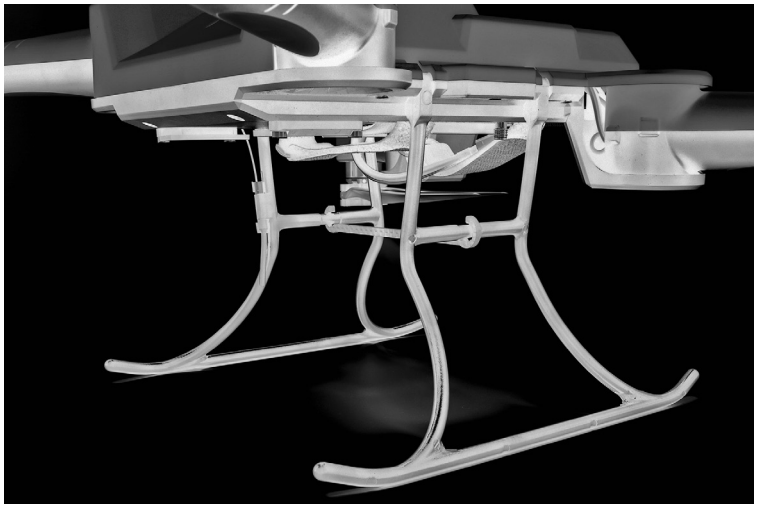
- Carry & storage dimensions: 215mm x 215mm x H 195mm.
- Ready to fly dimensions (Propeller folded): 609.0mm x 609mm x H 195.0mm
- Ready to fly dimensions (11 in. Propeller extended): 842.0mm x 842.0mm x H 195.0mm
- Maximum motor to motor dimension: Ø 567.0mm
- Motor: 2826 size 920KV. (Various motors are available as option for higher payload.)
- Empty RTF weight: 985g (Fully assembled, battery not attached.)
- Payload Capability: 1,000g (Include: battery(s), camera, gimbal, FPV…. etc.)
- Maximum Gross Take-Off Weight: 2,000g
- Air Duration: 22 min. (With 4S 5,200mAh battery, take-off weight 1,200g)
- Battery: 4S / 5200mAh, 15C battery pack with XT60 connector.
- Propeller: 11”x 4.5”CW & CCW folding Propeller.
- Motors (up to 40mm size), batteries & propellers (up to 12.5 in) are upgradable.
- Quick clip on platform for optional module.
- Suggest wind speed: GPS & RTL mode: lower than 20km/hr, altitude mode: lower than 25km/hr, auto landing: lower than 15km/hr

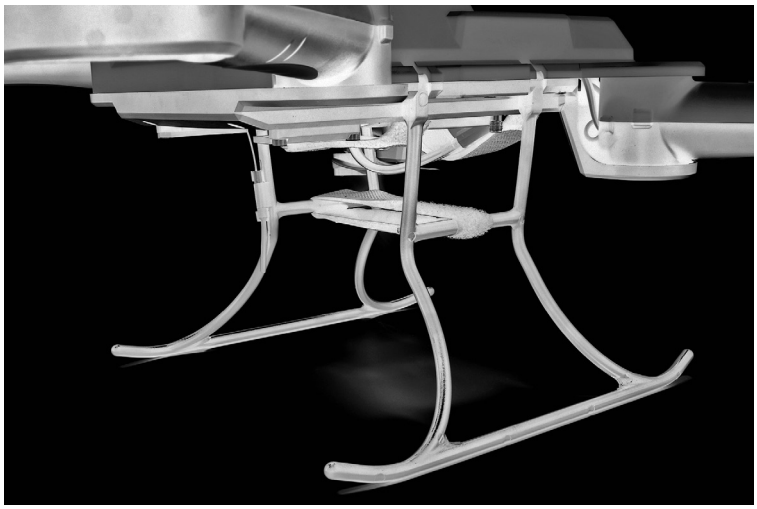


Unit: mm

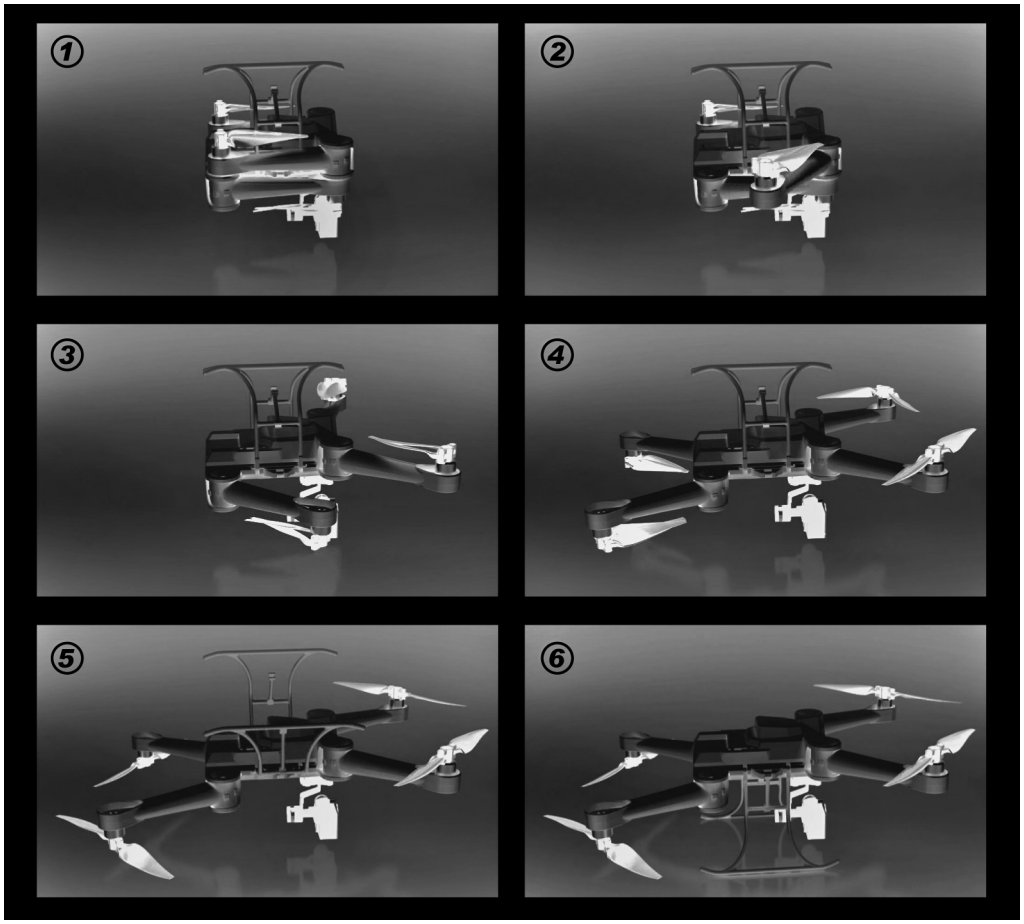
Un-fold the Quad-copter :

- Rotate two front arms forward till the end.
- Rotate the two rear arms backward till the end.
- Flip the two landing gear downward.
- Fix the landing gear by the support hook or the velcro strap.





- Unfold the propellers. (Note: if the propellers are not unfolded completely, it may cause strong vibration and lead the take-off to failure.)



Fold the Quad-copter :

- Reverse the process of "unfold the Quad-copter".
- Use one hand to hold the main body, the other hand to “PUSH” the arm inward to the main body. Never hold single arm while carrying the Quad-copter.

Charging the Battery :

The following descriptions vary according to different accessories.

- Connect the included balance charger to a power adapter.
- Insert the smaller connector into the charger. Check the connector pin is inserted properly.
- Once the battery is fully charged, the LED red light will change to a green light.
- Never charge a battery when it has not had the time to cool down from the previous use.

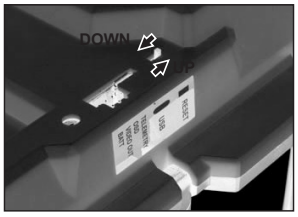
Battery Storage :

- Never store fully charged battery for over two days. Storing fully charged battery overtime may cause damage to the cell and decrease the flight time.
- Make sure that the battery is kept in a cool and dry storage.
- Stabbing or disposing battery may cause fire.

Flight :

Install the Battery Pack

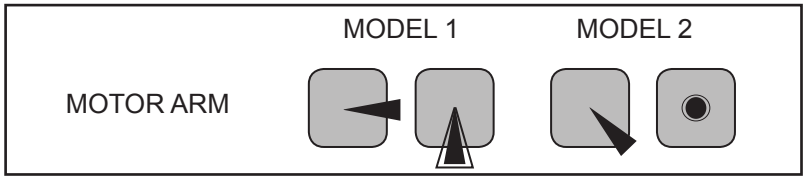
- Whatever the payload (Battery, Camera, … etc, anything except the Quad-copter itself.) is assembled on the Quad-copter, the CG (center gravity) should be located close to the center of all 4 motors for better flying performance.
- Battery should be the last payload to be installed on the Quad-copter. So the battery installation is the final adjustment of the best CG balance.
- A single or two parallel batteries can be installed under the bottom side of the main body. Adjust the location to get the best balance CG then secure the battery with Velcro straps.
- Before connect the battery, please make sure the RESET switch is in DOWN position. Then move the RESET switch to UP position AFTER power ON and the LEDs will light up and flash. Wait for the orange LED becoming static ON, which means GPS signal is good and the Flexify is ready to take off.



Arm & Disarm the Motors :

Motor arming

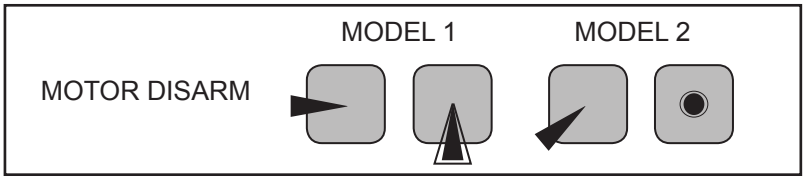
- The motor arming is only available in GPS and ALT-Hold flight mode.
- Make sure the propeller is fully unfolded. Pilot should keep a 5m safe distance from the Quad-copter, and the wind speed should lower than 20km/hr.
- Pull the joysticks as the picture below and stay 2 seconds.



- The blue LED on the right corner of the Quad-copter will flash once, and the motors will start to spin in slow speed. Release the throttle stick. The motor arming is completed.

Motor disarming :

● When the Quad-copter finish landing, move the throttle stick in low position. Make sure the motors are spinning in slow speed; or the Quad-copter will rotate quickly.



● Pull the joysticks as the picture above and stay 2 seconds -the blue LED on the right corner of the Quad-copter will flash once.

● Pull the joysticks till the motor is fully stopped. The motor disarming is completed.

GPS Hold :

● In GPS located situation, GPS-Hold (CH.5 at top position) flight mode will keep the Quad-copter's stabilization and locked at a fixed altitude, coordinate and orientation. The Quad-copter won't drift in the air due to the GPS lock to locate the coordinate in this flight mode.

● If GPS is not well located, the motor will not be armed.

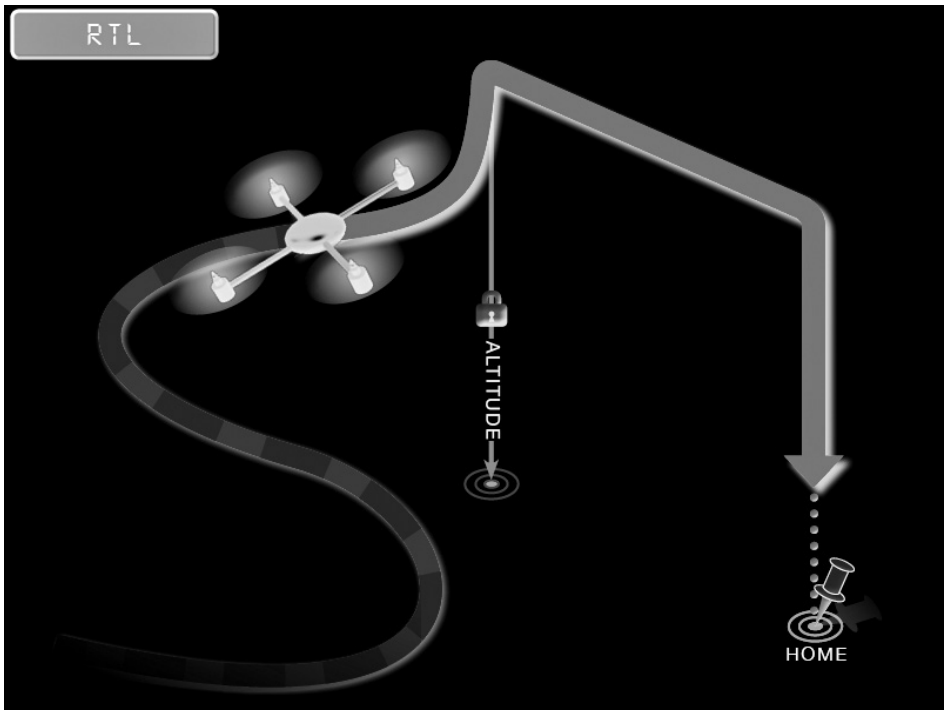
● If the GPS failed to locate in the air but the pilot activates GPS mode, the Quad-copter will response as altitude hold mode.

Altitude Hold :

● ALT-Hold (CH.5 at middle position) flight mode will keep the Quad-copter's stabilization and locked at a fixed altitude & orientation, but the Quad-copter may drift in the air due to no GPS help to locate he The Quad-copter coordinate..

● In a no GPS condition (as indoor), it will be the only available flight mode; the GPS-Hold and RTL will be unvalid.

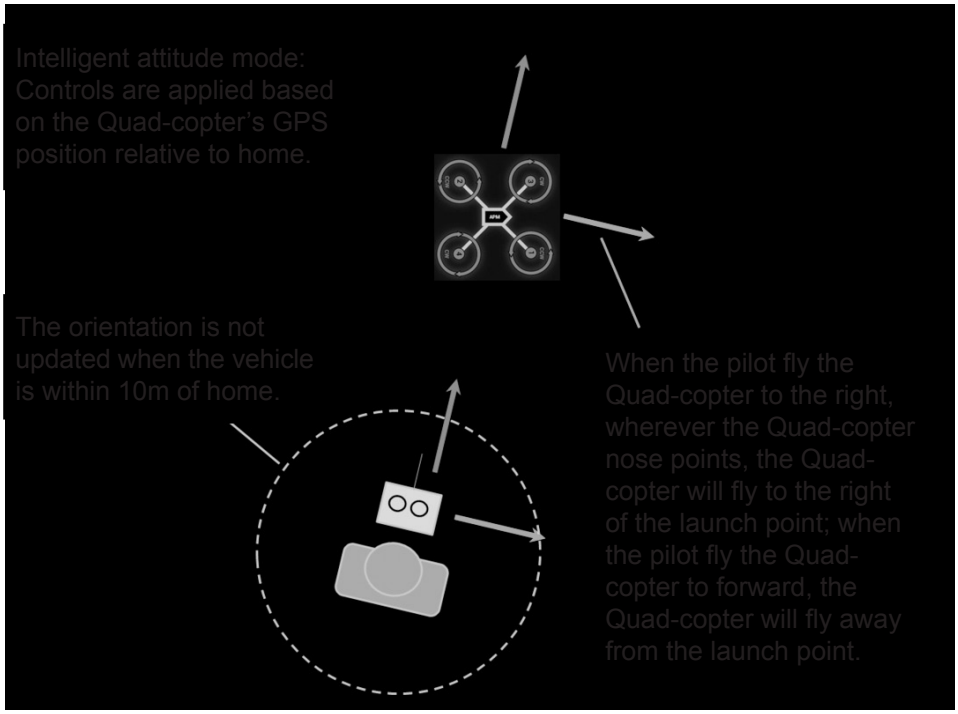
Return to “Launch point”



- When the motors are armed in GPS located situation, the “launch point” coordinate will be saved in The Quad-copter.
- Whatever how the RTL function is activated, by the flight mode switch (CH.5 at low position)” or because the failsafe, the Quad-copter will keep at least a 15M or higher altitude then fly back to the launch point and land.
- In failsafe RTL, the flight mode can be changed anytime when the CH.5 switch is flipped to other flight mode. (Please beware in this kind of operation.)

Intelligent Attitude Mode :

- Usually, intelligent attitude mode is activated when the Quad-copter flies beyond visual range.
- When the intelligent attitude mode is activated by CH.6, it uses the vehicle's position relative to home instead of the vehicle's initial heading when it was armed. This means no matter where the vehicle is, pulling the pitch back will cause it to return towards home regardless of the vehicle's actual heading.



Fail Safe:

Low Battery Fail Safe

- When the battery voltage reaches to failsafe voltage setting, all 4 arm LEDs will blink to warn the pilot, and the Quad-copter will activate RTL mode automatically.
- Note: The Quad-copter will activate RTL mode automatically; but the voltage is possibly too low to finish landing. Usually pilot has 1 minute or less to finish landing.

● We suggest pilot to activate ALT-Hold (CH.5 at middle position) and land manually.
● Please reserve about 30% power for return and landing. Do not use the low battery fail safe as a flight time alarm – it will decrease the battery using time; there is risk that the Quad-copter couldn't make it to launch point.

DISCLAIMER & WARNING :

● Please read this disclaimer carefully before using this product. This product is not suitable for people under age of 18. By using this product, you hereby agree to this disclaimer and signify that you have read it fully. You agree that you are responsible for your own conduct and content while using this product, and for any consequence thereof. You agree to use this product only for purposes that are proper and in accordance with local regulations, terms and any applicable polices and guidelines KP FUN INC may make available.

1. Any part of this disclaimer is subject to change without prior notice; refer to www.kp-fun.com for the latest version.
2. KP FUN INC reserves the right of final interpretation of this disclaimer.
3. This disclaimer is made in various language versions; in the event of divergence among different versions, English version shall prevail.

INSTRUCTIONS :

● Please read international and domestic airspace regulations and rules before using this product, should never use this product in a way that infringes upon or contravenes international or domestic laws and regulations. You agree that you are solely responsible for your own conduct and content while using this product, and for any direct or indirect consequences caused by not following this manual, violate or disregard any other applicable local laws, administrative rules and social habits thereof.
● This product is flying quad-copter that offers easy flight both indoors and out when powered normally and in a good working order.

1. These product woks most efficiently with genuine KP FUN INC accessories. KP FUN INC shall not be liable for any damage or legal responsibilities to this product and/ or accidents resulting from malfunctions of non KP FUN INC accessories.

2. This product features a built-in autopilot system and we have made its operation as safe as possible. However, it is good practice to remove all propellers before switching it on to for calibration and parameter setting.
3. Be sure to check all connections and keep children and animals a safe distance away during firmware upgrades, system calibration and parameter setting.

CAUTIONS :

Carry out each of the following steps carefully before before every flight.

1. Fly safe. Stay away from obstacles, crowds, high-voltage lines and other possible sources of electromagnetic interference,
2. Check that you aren't overloading the aircraft.
3. Check that the propellers and the motors are installed properly and firmly before each flight check that the rotation direction of each propeller is correct. Do not get close to or touch working motors or propellers to avoid serious injury
4. Avoid interference between the remote control or on-board Wi-Fi device and other wireless equipment
5. Check that flight battery, controller battery and range extender battery are full.
6. Switch on remote control first, then power on the quad-copter. Upon landing, power off the quad-copter first and then switch off the remote control.
7. Check that all parts are in good condition. Do not fly with aging or damaged parts.
8. Do not fly near areas with magnetic or radio interference. These include but are not limited to: high voltage lines, large scale power transmission stations, mobile base stations and broadcasting towers. Failing to do so may compromise the transmission quality of this product, cause remote control and video transmission errors and may affect flight orientation and location accuracy
9. Do not use in severe weather condition including rain, snow, heavy wind, hail, lighting, tornado or hurricane.
10. Read and familiarize yourself with the quick start guide and the detailed user guide, as well as information available on the package and www.kp-fun.com regularly.

USING BATTERY :

1. Do not soak the battery. Make sure that the battery is kept in a cool and dry storage.
2. Do not mix-use flight battery and single-use battery. Do not mix battery brands inside the controller.
3. Keep battery out of the reach of children. If a child swallowed the battery accidently, ask for medical help as soon as possible.
4. Do not charge battery near flammable materials or on a flammable surfaces such as carpet or wood
5. Always use a KP FUN INC approved adapter.
6. Make sure the battery is installed properly while operation.
7. Do not attach the battery to the wall or car charger sockets directly.
8. Do not heat battery or dispose of batteries in fire.
9. Do not short'-circuit the battery terminals.
10. Do not store battery with other metal objects; such as necklace or hair clips.
11. Do not drop, hit, or throw batteries.
12. Do not solder battery terminals.
13. Do not strike or stab battery
14. Do not attempt to dismantle a battery in any way.
15. Do not expose battery to extreme temperatures including excessive heat. Do not leave the battery inside of the vehicle on hot days.
16. Do not place or use battery on strong electrostatic or electromagnetic surfaces or surrounding areas. This may result in battery damage.
17. Avoid direct contact with the electrolyte contained within the battery. The electrolyte and electrolysis vapors are harmful to your health.
18. Never use a swollen, leaky or damaged battery
19. Clean battery terminals with a dry and clean cloth.
20. Before disposing battery, discharge and insulate the battery.
21. Only use KP FUN INC battery.
22. Use the battery under the instructions from Flexify instruction manual, KP FUN INC official guideline, Flexify tutorial, and the disclaimer.

LIMITATION OF LIABILITY :

- KP FUN INC accepts no liability for damage(s), injuries or any legal responsibilities incurred directly or indirectly from the use of this product in the following conditions :

1. Damage(s), injuries or any legal responsibilities incurred when users are drunk, taking drugs, under the influence of anesthesia, dizziness, fatigue, nausea and any other conditions both physical and mental that could impair your ability
2. Damage(s), injuries or any legal responsibilities caused by subjective intentional operations.
3. Any mental damage compensation caused by accident.
4. Damage(s), injuries or any legal responsibilities caused by flying in no-fly zones such as natural reserve.
5. Failure to follow the guidance of the manual in assembly or operation.
6. Malfunctions caused by refit or replacement with non-KP FUN INC accessories and parts.
7. Damage(s), injuries or any legal responsibilities caused by using third party products or fake KP FUN products,
8. Damage(s), injuries or any legal responsibilities caused by improper operation or subjective misjudgment.
9. Damage(s), injuries or any legal responsibilities caused by mechanical failures due to product aging.
10. Damage(s), injuries or any legal responsibilities caused by continued flying after low voltage protection alarm is triggered.
11. Damage(s), injuries or any legal responsibilities caused by knowingly flying the aircraft in abnormal conditions (such as when water, oil, soil, sand or other unknown material are inside the aircraft, incomplete assembly, the main components have obvious faults, obvious defect or missing accessories)
12. Damage(s), injuries or any legal responsibilities caused by flying in the following situations such as the aircraft in magnetic interference areas (such as high voltage lines, power stations, broadcasting towers and mobile base stations), radio interference areas, government regulated no-fly zones, if the pilot loses sight of the aircraft, suffer from poor eyesight or are otherwise not suitable for aircraft operation.
13. Damage(s), injuries or any legal responsibilities caused by use in bad weather, such as a rain, heavy wind, snow, hail, lightning, tornadoes and hurricanes.
14. Damage(s), injuries or any legal responsibilities caused when the aircraft is in the following situations: collision, fire, explosion, floods, tsunamis, subsidence, ice trapped, avalanche, debris flow, landslide, earthquake, etc.
15. Damage(s), injuries or any legal responsibilities caused by infringement such as any data, audio or video material recorded by the use of aircraft.

16. Damage(s), injuries or any legal responsibilities caused by the misuse of the battery, protection circuit, RC model and battery chargers.
17. Consequential damages, injuries or any legal responsibilities caused by any malfunction of an equipment or accessory, including memory cards, that result in the failure of an image or video to be recorded or to be recorded in a way that machine readable.
18. Any consequential damages, injuries or any legal responsibilities caused by operations that do not follow all instructions laid out in the quick start guide and detailed user guide or information included on the package or www.kp-fun.com
19. Damage(s), injuries or any legal responsibilities caused by risky operator behavior without sufficient training.
20. Any legal responsibilities, personal or property damage or environmental damages caused by operator noncompliance with local laws and regulations.
21. Damage(s), injuries or any legal responsibilities caused by flying in the areas prohibited by laws, regulations, or related entities.
22. Damage(s), injuries or any legal responsibilities caused by operating without following instructions or warnings found on www.kp-fun.com, product instructions, product quick start guideline, or KP FUN INC disclaimer.
23. Other losses that not covered by the scope of KP FUN INC Innovations liability.

FCC

This device was tested for RF exposure in an uncontrolled environment, the measured Body SAR value is 0.071 W/kg.

This product complies with Part 15 of the FCC rules; Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION :

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications or changes to this product. Such modifications or changes could void the user's authority to operate the product.

NOTE :

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part I 5 of the FCC Rules. These limits are designed to provide reasonable protection against harmful

interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help,

1.

Due to the used enclosed material, this product shall only be connected to a USB interface of version 2.0 or higher. The connection to so called "power USB" is prohibited.

- Caution: Risk of explosion if battery is replaced by an incorrect type.
- Dispose of used batteries according to the instruction.
- KP FUN INC hereby declares that this product is in compliance with the essential requirements and other relevant provision of Directive I 995/5/EC.

2. Please note that this product is intended for personal use and should never be used in a manner that infringes upon or contravenes international or domestic law and regulations. You shall not use this product to:

a. Defame, abuse, harass, stalk, threaten or otherwise violate the legal rights (such as right of privacy and publicity) of others;

b. Photograph people on private property without their consent or photograph in areas where photography is prohibited without prior authorization.

c. Use this product for any illegal or inappropriate purpose other than general personal use (such as spy, military operation , unauthorized investigation and unauthorized detection);

d. Violate or disregard applicable local laws, administrative rules and social habits.

Please be advised that in certain areas, the copying of images and videos from events, performances, exhibitions, or commercial properties by means

of a camera may contravene copyright or other legal rights even if the image or video was shot for personal use, In addition, remote control aircraft are banned from conducting commercial activities in certain countries and regions.

- If you have any problem you cannot solve during installation, please contact KP FUN INC authorized dealers.

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