

PHANTOM Quick Start Manual v1.5

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Thank you for purchasing our product. Please visit the DJI website, PHANTOM section to confirm if the printed manual is the latest one according to the manual version. If not, please download and refer to the latest manual.

Please read the entire manual strictly and follow these steps to use your product. The manual will get you ready to fly by doing simple operations. You can get an advanced manual from DJI website to learn more about PHANTOM, for example, configuring parameters by connecting to assistant software, changing the transmitter to Mode1, matching frequency between the transmitter and the receiver, etc.

Make sure to use the NAZA-M assistant software of 2.0 version (or above 2.0) to carry out firmware upgrade and parameter configuration. DO NOT use the NAZA-M assistant software below 2.0 version.

www.dji-innovations.com

Disclaimer & Warning

Please read this disclaimer carefully before using the PHANTOM. By using this product, you hereby agree to this disclaimer and signify that you have read them fully. **THIS PRODUCT IS NOT SUITABLE FOR PEOPLE UNDER THE AGE OF 18.**

PHANTOM is an excellent flight platform offering an excellent flight experience, only if it is powered normally and in a good working condition. Despite the PHANTOM having a built-in autopilot system and our efforts in making the operation of the controller as safe as possible when the main power battery is connected, we strongly recommend users to remove all propellers when calibrating and setting parameters. Make sure all connections are good, and keep children and animals away during firmware upgrade, system calibration and parameter setup. DJI Innovations accepts no liability for damage(s) or injuries incurred directly or indirectly from the use of this product in the following conditions:

1. Damage(s) or injuries incurred when users are drunk, taking drugs, drug anesthesia, dizziness, fatigue, nausea and any other conditions no matter physically or mentally that could impair your ability.
2. Damage(s) or injuries caused by subjective intentional operations.
3. Any mental damage compensation caused by accident.
4. Failure to follow the guidance of the manual to assemble or operate.
5. Malfunctions caused by refit or replacement with non-DJI accessories and parts.
6. Damage(s) or injuries caused by using third party products or fake DJI products.
7. Damage(s) or injuries caused by mis-operation or subjective mis-judgment.
8. Damage(s) or injuries caused by mechanical failures due to erosion, aging.
9. Damage(s) or injuries caused by continued flying after low-voltage protection alert is triggered.
10. Damage(s) or injuries caused by knowingly flying the aircraft in abnormal condition (such as water, oil, soil, sand and other unknown material ingress into the aircraft or the assembly is not completed, the main components have obvious faults, obvious defect or missing accessories).
11. Damage(s) or injuries caused by flying in the following situations such as the aircraft in magnetic interference area, radio interference area, government regulated no-fly zones or the pilot is in backlight, blocked, fuzzy sight, and poor eyesight is not suitable for operating and other conditions not suitable for operating.
12. Damage(s) or injuries caused by using in bad weather, such as a rainy day or windy (more than moderate breeze), snow, hail, lightning, tornadoes, hurricanes etc.
13. Damage(s) or injuries caused when the aircraft is in the following situations: collision, fire, explosion, floods, tsunamis, subsidence, ice trapped, avalanche, debris flow, landslide, earthquake, etc.
14. Damage(s) or injuries caused by infringement such as any data, audio or video material recorded by the use of aircraft.
15. Damage(s) or injuries caused by the misuse of the battery, protection circuit, RC model and battery chargers.
16. Other losses that are not covered by the scope of DJI Innovations liability.

Cautions for Product Use

Please check the following steps carefully every time before flight.

1. Before use of the product, please accept some flight training (Using a simulator to practice flying, getting instruction from a professional person, etc.).
2. Check that all parts of the multi-rotor are in good condition before flight. Do not fly with aging or broken parts.
3. Check that the propellers and the motors are installed correctly and firmly before flight. Make sure the rotation direction of each propeller is correct. Do not get close to or even touch the working motors and propellers to avoid serious injury.
4. Do not over load the multi-rotor (should be less than 1000g).
5. Make sure that the transmitter battery and flight battery are fully charged.
6. Try to avoid interference between the remote control transmitter and other wireless equipment.
7. Make sure to switch on the transmitter first, then power on the multi-rotor before takeoff! Power off the multi-rotor first, then switch off the transmitter after landing!
8. The fast rotating propellers of PHANTOM will cause serious damage and injury. Always fly the multi-rotor 3m or above away from you and unsafe conditions, such as obstacles, crowds, high-voltage lines, etc. FLY RESPONSIBLY.
9. All parts must be kept out of the reach of children to avoid CHOKE HAZARD; if a child accidentally swallows any part you should immediately seek medical assistance.
10. Please always keep the compass module away from the magnet. Otherwise it may damage the compass module and lead the aircraft to work abnormally or even be out of control.
11. **DO NOT use the PHANTOM transmitter (receiver) with the third party remote control equipment.**
12. **Make sure to use the NAZA-M assistant software of 2.0 version (or above 2.0) to carry out firmware upgrade and parameter configuration. DO NOT use the NAZA-M assistant software below 2.0 version.**
13. **The built-in ESCs of PHANTOM ONLY support 3S (11.1V) power supply.**
14. **ONLY use the DJI original motor and 8-inch propeller.**
15. **If you want to put the PHANTOM in a car, please keep it away from the speaker, since the compass module may be magnetized.**
16. **DO NOT use the magnetic screwdriver. Otherwise, keep the screwdriver at least 10cm away from the compass module, to avoid magnetic interference.**
17. **If you use your own equipment(for example: GoPro3), please make sure the WiFi function is disabled, to avoid the interference on the transmitter, which may cause the PHANTOM to FailSafe, crack and or even to fly away.**
18. **For Mac user, please install Windows Parallel to run assistant software.**

If you have any problem you cannot solve during installation, please contact a DJI Authorized Dealer.

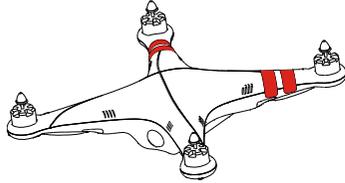
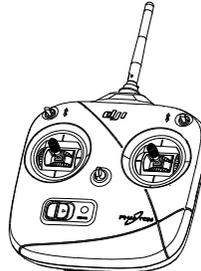
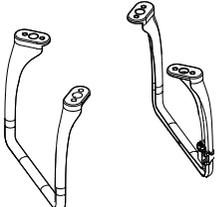
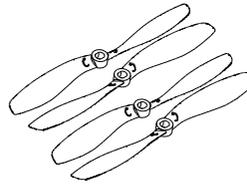
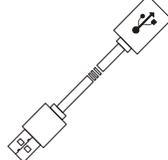
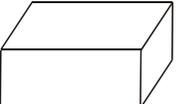
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Battery Usage & Charging Cautions

1. Do not put the battery into water; store the battery in a cool and dry environment.
2. Only use the correctly specified batteries
3. Batteries must be kept out of the reach of children; if a child accidentally swallows the battery you should immediately seek medical assistance.
4. Do not use or store the battery near fire.
5. Battery should be charged with proper standard charger.
6. Do not connect the battery reversed in positive and negative terminals in the charger or equipment.
7. Do not connect the battery directly to the wall plugs or vehicle-mounted socket.
8. Do not put the battery into a fire or heat the battery.
9. Do not let the battery terminals (+and-) touch together to cause short-circuit.
10. Do not transport or store the battery together with metal objects.
11. Do not hit or throw the battery.
12. Do not weld the battery terminals together.
13. Do not drive a nail in, hit with a hammer, or stomp on the battery.
14. Do not disassemble or alter the battery.
15. Do not use or store the battery in extreme heat environments, such as direct sunlight or in the car in hot weather. Otherwise, the battery will overheat, may cause fire (or self-ignite), this will affect the performance of the battery, shorten the service life of the battery.
16. Do not use the battery in strong electrostatic areas, otherwise the electronic protection may be damaged which may cause a hazard.
17. If you get the battery electrolyte leakage into your eyes, don't rub, first wash your eyes with clean water then seek medical assistance immediately. If not handled in a timely manner, eyes could be damaged.
18. Do not use the battery when it emits an odour, high temperature, deformation, change in colour or other abnormal phenomena; if the battery is in use or charging, you should stop charging or using immediately.
19. If the battery terminal gets dirty, please clean it with a dry cloth before using. Otherwise it will cause a poor contact, thus causing energy loss or inability to charge.
20. Discarded battery could lead to a fire; you should completely discharge the battery and wrap the output terminal with insulating tape before discarding.

In the Box

Aircraft	Transmitter	Landing Gear (with Compass Module)
		
Frame for Camera	Propellers	Assistant Wrench
		
USB Cable	Screw Package (M3x6)	Accessory
		

Required Items

Phillips Screwdriver	5# AA Batteries
	

Introduction

The PHANTOM is an all-in-one small Quad Copter designed for multi-rotor enthusiasts. Before shipping from the factory, it has been configured and fully tested, which means you have no configuration to do.

Built-in

- ✓ NAZA-M Autopilot System

(Refer to NAZA-M manual for details)

- ✓ GPS & Compass Module
- ✓ R/C Receiver
- ✓ Power System for Flight
- ✓ LED Indicator
- ✓ USB Interface

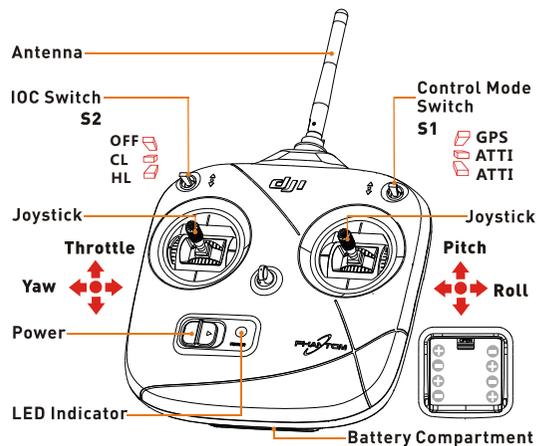
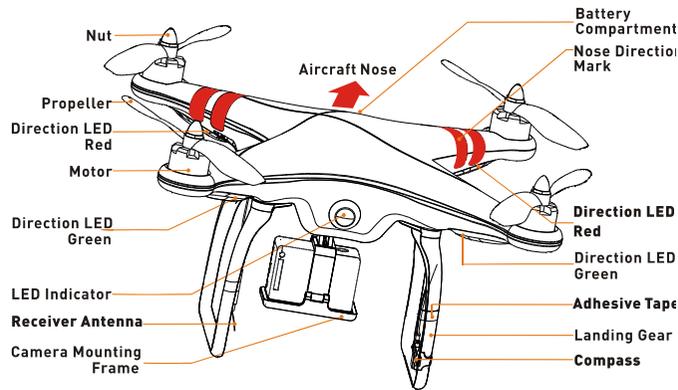
(in the Battery Compartment)

Function

- ✓ ATTI./GPS ATTI. Mode
- ✓ Intelligent Orientation Control
- ✓ Enhanced Fail-Safe
- ✓ Low-Voltage Alert

Camera Frame (For GoPro)

- Takeoff Weight:<1000g



- ✓ Working Frequency: 2.4GHz ISM
- ✓ Control Channel Numbers of Transmitter: 6
- ✓ Communication Distance: 300m
- ✓ Receiver Sensitivity(1%PER): > -93dBm
- ✓ Power Consumption of Transmitter: < 20dBm
- ✓ Working Current/Voltage: 52 mA@6V
- ✓ AA Battery (5#): 4 Required

Aircraft & Transmitter Basic Operation

Definitions

- **Stick neutral position and stick released** means the stick of Transmitter is pushed to the central position.
- **Command Stick** means the stick of Transmitter is pushed away from the central position.

Transmitter	Aircraft (← is the nose direction)	GPS ATTI. Mode/ATTI. Mode
		Throttle stick is for aircraft up& down control. The aircraft will hold the height automatically if the stick is centered. The throttle stick cannot hold the central position when released.
		Yaw stick is for aircraft rudder control. Command stick controls the angular velocity of the aircraft, with the maximum rudder angular velocity of 200°/s. Left stick command gives counter clock-wise rotation of the aircraft, & vice versa.
		Roll stick is for aircraft left/right control and Pitch stick is for front/back control. Command stick controls the angle of the aircraft. Stick neutral position is for 0°, its endpoint is 45°. The roll and pitch sticks returns to the central position when released.
		<ul style="list-style-type: none"> • In GPS Mode, the aircraft will hover (hold horizontal position) when sticks released. • In ATTI. Mode, the aircraft will keep attitude stabilizing without horizontal position (different from hover in GPS Mode)
		3-position switch (S1) on the Transmitter for mode control. Only after Compass Module connection and Compass calibration, GPS ATTI. Mode is available. Otherwise, all switch positions are for ATTI. Mode. Pay attention because the GPS ATTI. Mode is dependent on the number of GPS satellites acquired by the main controller. Refer to the LED Indicator.
		3-position switch (S2) on the Transmitter for Intelligent Orientation Control (IOC). Set the switch to OFF in basic flight. This function is defaulted to off. If you want to use this function please refer to the advanced manual. Use IOC function when you are familiar with basic flight.

You can change the operation mode of the Transmitter according to the advanced manual if necessary.

Before Flying

1. Installing the Transmitter Batteries

1. Open the battery compartment cover of the Transmitter.
2. Install 4x AA battery (5#) in accordance with the + /- pole.
3. Close the battery compartment cover of the Transmitter.

- DO NOT use the PHANTOM transmitter (receiver) with the third party remote control equipment.
- Risk of explosion if replaced by an incorrect type.
- Dispose of used batteries according to the instructions.
- Remove the batteries after use.
- When the voltage is lower than 4V, the transmitter will alarm with sound of "BB.....", please change the batteries.

2. Battery Charging – LiPo Battery

Please use the full charged battery of 3S LiPo.

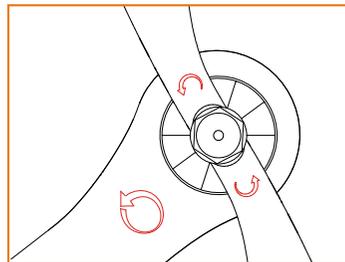
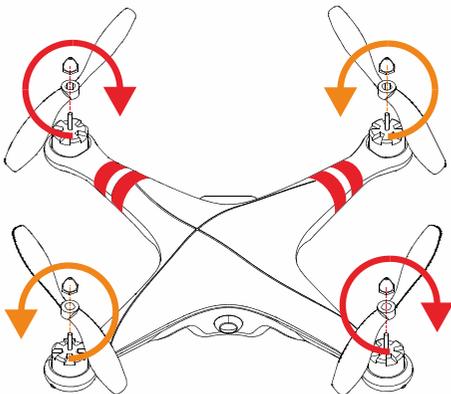
(Recommended parameters: 733496 - 2200MAH-20C - 11.1V.)

The built-in ESCs of PHANTOM ONLY support 3S (11.1V) power supply. DO NOT use the battery of higher voltage.

3. Fitting the Propeller

1. First prepare the aircraft and the propellers (original 8-inch).
2. Assemble the propellers (the side with rotary mark facing up) to the aircraft. Make sure the rotary mark on the propeller is the same as the mark on the frame arm. The arrow's direction stands for the rotating direction of the motors.
3. Finally fit the propeller nuts.

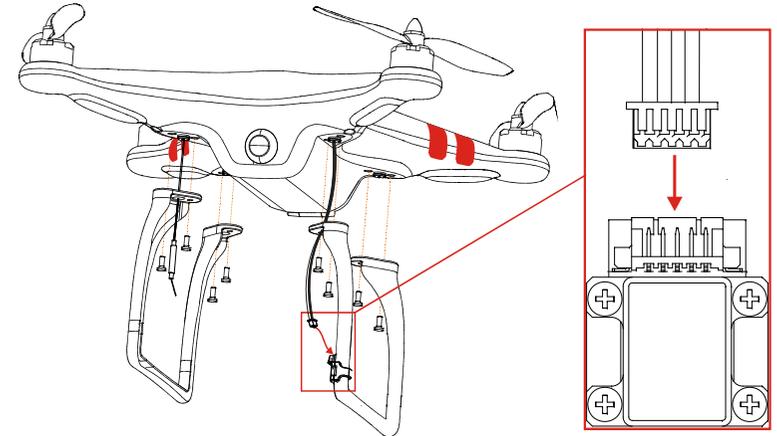
DO NOT use thread locker when mounting the propellers, just tighten the screws is enough.



4. Mount the Landing Gear with the Compass Module if Required

If the GPS ATTI. Mode is desired, you must first mount the landing gear which contains the Compass Module.

1. Prepare the aircraft and the landing gear.
2. Mount the landing gear with the Compass Module to the right part (shown as the following chart); make sure the 5-pin cable is through the hole of the landing gear. Fix the landing gear with screws (M3x6), and then connect the 5-pin cable to the Compass Module.
3. Mount the other landing gear to the left part.
4. Fix the antenna and the 5-pin cable on both landing gear by using the white adhesive tape.



Landing Gear Mounting

Compass Module Connecting

- When flying, please make sure the compass module is stationary and firm.
- If the Landing Gear with the compass module mount on has been deformed, please replace it with a new one and mount it as the procedures above.
- The compass module is not waterproof, and not anti-oil.
- DO NOT use the magnetic screwdriver. Otherwise, keep the screwdriver at least 10cm away from the compass module, to avoid magnetic interference.

5. Turn on the Transmitter

1. Lower the throttle stick to bottom position, and set the IOC and Control Mode switch to the top position.
2. Turn on the power switch of the Transmitter, when the linking is successful, the LED indicator on the Transmitter will change to solid red.

Make sure to keep the throttle stick at the bottom position before the LED change to solid red!!!

Flight Test

1. If in GPS ATTI. Mode, place the aircraft in an open space without buildings or trees. Take off the aircraft after 6 or more GPS satellites are found (Red LED blinks once or no blinking). If in ATTI. Mode, you can skip this step.
2. Place the aircraft 3 meters away from you and others, to avoid accidental injury.
3. Start-up
 - ✓ Momentarily complete one of the following stick combinations (shown below) to start the motors.



- ✓ Release the sticks, and slowly raise the throttle stick from the bottom. The motors will stop if you do not push the throttle stick from the bottom within 3 sec and you will need to execute the start-up procedure again. When the aircraft is on the point of leaving the ground, continue to push the throttle stick upwards to rapidly take off from the ground, pay attention not to push the stick excessively.
 - ✓ Pay attention to the aircraft movement at any time when flying, and use the sticks to adjust the aircraft's position. Keep the yaw, roll, pitch and throttle sticks at the neutral position to hover the aircraft at the desired height.
4. Lower the aircraft slowly until touch down is achieved. The motors will stop automatically after 3 seconds, or you can repeat the start-up stick command to stop the motors sooner.
 5. Please always power off the aircraft first, and then switch off the transmitter after landing.

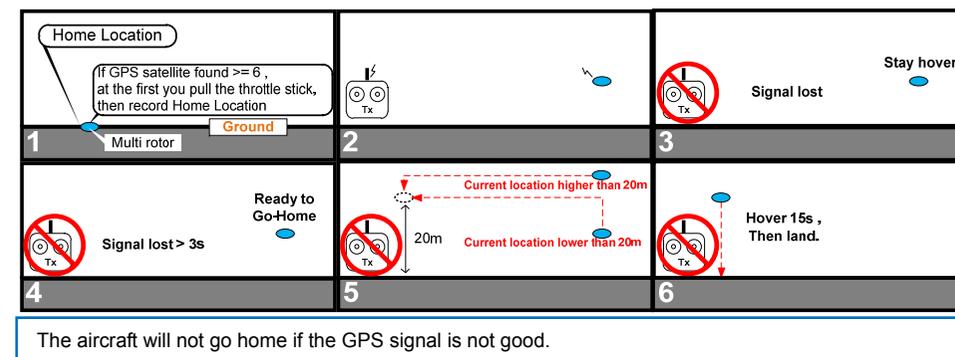
FLYING NOTES !!!

- ✓ If in GPS ATTI. Mode, keep the aircraft flying in the open space without obstruction. Pay attention to the GPS satellite status indicator LED. If the GPS signal is bad (red LED blink twice or three times), switch to ATTI. Mode. You may use the GPS ATTI. Mode again after the GPS signal is back to normal
- ✓ If the battery voltage is too low for flying, the aircraft enters the first level protection with LED flashing quickly Red, please land ASAP. Once the aircraft enters the second level protection, the aircraft will drop height automatically.
- ✓ We recommend that you take off the aircraft in ATTI. Mode.
- ✓ If you want to put the PHANTOM in a car, please keep it away from the speaker, since the compass module may be magnetized.
- ✓ Please always switch on the transmitter first, then power on the aircraft before takeoff!
- ✓ DO NOT fly near to ferromagnetic substances, to avoid strong magnetic interference with the GPS.
- ✓ It is recommended to land the aircraft slowly, to prevent the aircraft from damage when landing.
- ✓ If the Transmitter indicates low-battery alert, please land ASAP. In this condition the Transmitter may cause the aircraft to go out of control or even crash.
- ✓ After powering on and before the motors start, if the aircraft LED double blinks yellow or green without Transmitter stick movement, you should power cycle the aircraft.
- ✓ The aircraft will automatically land (or return home if in GPS mode) if the fail-safe mode is active.
- ✓ If the LED lights Red, please hover the aircraft until it turns off, so as to have better flight performance.

Enhanced Fail-safe

- Enhanced Fail-safe will be triggered when the Main Controller loses the control signal, in these following situations.
 - ✓ Signal lost between the transmitter and receiver, e.g. aircraft is out of the communication range, or transmitter is powered off, etc.
 - ✓ One or more connections of A, E, T, R, U channels between main controller and receiver is lost. If this happens before take-off, the motors will not work if you push the throttle stick; if this happens during the flight, the LED will flash yellow to warn, in addition to the fail-safe method.
- The aircraft will automatically land if the fail-safe mode is active, or return home if in GPS mode.
- Before takeoff, the current position will be saved as the home point by the MC automatically when you push the throttle stick first time, after 6 or more GPS satellites are found for more than 8 seconds.
- Make sure to save the home location before takeoff and keep it in mind clearly for safety reasons.
- When you switch to **ATTI. Mode**, MC will disengage enhanced failed-safe mode, you can re-gain control of aircraft.

The following diagram shows the function of Go-Home and Landing.



Low-Voltage Alert

Low-Voltage Alert is to indicate that the battery cannot provide enough power for the aircraft, in order to warn you to land the aircraft ASAP. There are both first level and second level protections. **It is not for fun, you should land your aircraft ASAP to prevent your aircraft from crashing or other harmful consequences!!!**

In ATTI. Mode & GPS ATTI. Mode.

- ✓ The first level protection has LED warning.
- ✓ During second level protection the aircraft will land automatically with LED warning. Meanwhile the center point of throttle stick will move up slowly to 90% of endpoint, you should land ASAP to prevent your aircraft from crashing! When the center point is at 90% of endpoint, aircraft will still ascend slowly if you continue to pull the throttle stick, and the control of Pitch, Roll and Yaw are the same as before.

