APEX Important statement

1. This product is applicable to teenagers and adults over the age of 14. This remote controlled four-axis drone has certain difficulties at the early stage of learning.Suggest only fly under the guidance of someone with operational experience.
2. This product is designed with high and new technology in many aspects such as electronics and machinery. For those with less experience operator, it should be kept away from people during flight.We are not responsible for any serious personal injury or property loss which may result from improper operation.
3. Once the product is sold, we will not assume any safety responsibilities such as accidents occurred during operation or use.
4. In case of problems of use, operation and maintenance, you can contact local dealers to provide technical support or after-sales service.

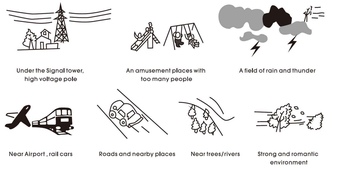
Cautions:
1. Be sure to check your surroundings before flying.
2. Do not let the drone fly out of sight while flying.
3. Children cannot fly alone. Please fly with adults.
4. Please confirm that there is no other product using the same frequency band in the same area.

⚠ WARNING

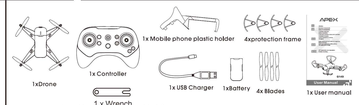
* The chargers, wires, plugs, shells and other parts shall be checked regularly. If any damage is found, it shall be discontinued until it is repaired.
* Only use original charger, charger is not toy.
* Please clean the product with a clean and soft cloth. The drone should be disconnected from the charger before cleaning.
* Adult supervision is required when charging a rechargeable battery.

A non-rechargeable battery is not rechargeable.
* Do not short circuit, decompose, fall into the air or put into fire.
* For the long time not operate product , Please remove the battery.
* Do not seriously crash or drop the drone and remote controller.
* This packing and instruction manual contains important information about the product. Please keep it.

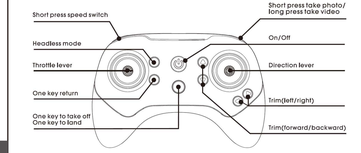
APEX Don't fly the drone in below conditions



APEX Standard components



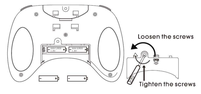
APEX Controller instruction



APEX Battery Installation

* As shown in the picture, remove the battery cover of the remote control, according to the battery pole in the battery box.Install 2pcs of No.7 AAA batteries correctly (Additional purchase) and reload the batteries cover and tighten the screws.

Note:
A. when installing the battery, the positive and negative poles of the battery must be identified, and the positive and negative poles of the battery box must be identified.Please don't install wrong.
B. Do not mix new and old batteries or different types of batteries.The pool batteries should be taken out in time.



APEX Calibration between drone and controller

On a flat surface

⚠WARNING

Step one

First, turn on the switch button of the remote control, and then switch on the power switch at the drone.Put the tail of the drone point at you and put it on the horizontal surface.At the same time the remote control will be comes "beep, beep beep" sounds,it indicates a successful matching code.
Important note: the drone switch on/off need long press the power switch.Because the internal gyros need to be horizontal calibrated after the drone open, so please must put it in the horizontal surface place.

Step two

As shown in the picture, push both joystick of the remote control to the lower right corner at the same time.When the indicator light of the drone flashes quickly, release the remote control and wait for the indicator light keep on lighting.The remote control will comes "beep beep" sounds and the calibration completed.

If long time not used it, please take out the battery of the remote control and keep it properly.Note: If not remove the batteries of the remote control,store it for long time will cause leakage of battery and damage the remote control, even cause the risk of burning.

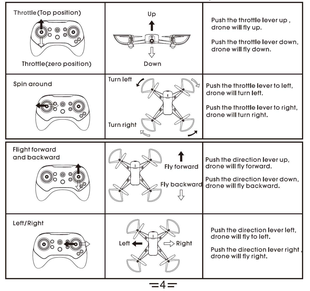
APEX Controller's function

1.On/off
(1)On
Long press "On/Off" button to turn on the controller .
(2) Off
Long press "On/Off" button to turn off the controller .
2. Unlock, lock
First turn on the remote control, then turn on the drone power. At this time, you will hear a "beep, beep beep" sound from the remote controller till the drone indicator light is always on, it means the paring is completed.
Unlock: Press the left throttle stick to the lower left corner, and the right direction rocker to the lower right corner (this action needs to be done at the same time), you can start Move the drone motor, after the motor starts, release the joystick. At this point, the drone can be operated.
Locking: Press the left throttle stick to the lower right corner, and the right direction rocker to the lower left corner (this action needs to be done at the same time), the motors stop turning and the drone is locked.
3.Throttle control
After unlock the controller, push the throttle more than middle ,the drone will take off,Push the throttle lower than middle ,the drone will decline.Leave the throttle in middle, drone will hold its altitude.
4.One key take off / One key landing
After unlock the controller, press "One key take off/One key landing" button,drone will hover one meter above the ground. Press again, drone will land automatically.
5.Turning(Left/Right)
After the drone lift-off, push the throttle lever to left /right, the drone will turn left/ right .
6.Forward/Backward
After the drone lift-off, push the direction lever to up/down, the drone will fly forward/backward.
7.Left and right
After the drone lift-off, push the direction lever to left/right, the drone will fly to left/right.
8.Trim
After the drone take off, without move the throttle, if the drone's direction is moving, press "trim" button to adjust the direction.

9.Take photo/video
Short press "take picture/video" button to take photo, long press it to take video. Photos and videos will save in the app .
10. Short Press to Change Speed
Short press the button to adjust the speed. There has three speed level, when the buzzer beep comes one sounds, it's speed level one, drone will move slowly. When the buzzer beep comes two sounds, it's speed level two. When the buzzer beep comes three sounds, its level three, which is the fastest speed level.
11.Headless mode
Start and settings: Short press the headless mode button, the remote control beeps one time, the drone indicator light flashes slowly, headless mode start.Now the direction of the drone's head is the front of headless mode.If there has a crash or flying forward deviation, please restart to adjust the required direction frequency.
Exit headless mode: Short press the headless mode button again, (the remote control beeps twice and the drone indicator light is always on),it is exit headless mode.
In headless mode, no matter which direction the head of the drone turns, the current position of the remote control is the right and behind of the drone. At this moment ,pull down the joystick it can recall the drone. Push the joystick up, the aircraft can flight far away.
12.On key to return (Note: One key return function should be operated in the headless mode)
When the rear of the drone are aligned with the pilot, after a short press the button, the drone will automatically return.If offtack happen during return you can correct the channel through the left and right joystick.Short press the button again to end the return trip.Use the back and forth direction joystick also can end the return trip.

APEX Correct operations of drone

Before you fly the drone, please do some simulated flight practice.



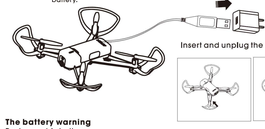
APEX Charging

1. Remove the lithium battery from the drone, insert one end of the charging cable with the USB port into the phone adapter interface, and then the interface with the plug on the other end is connected to the charging battery.
2. Connect the charging cable to the port of the computer host.The method is the same as above, and the charging can also be completed.
3. The indicator light flashes in the charging state, and the light will be always on when the battery is saturated.

⚠Caution

During the flight, when you hear the "beeps" sounds from the remote control,it indicates that the Drone's battery voltage is not enough, so the drone should talk behind to recharge.It need to charge it with the special charger we gave.

During the flight, when the remote control indicator lights flicker, it indicates that the remote control battery voltage is not enough, please replace the remote control battery.


Insert and unplug the battery picture

The battery warning

Rechargeable battery:
This drone can use rechargeable lithium batteries.If the battery cannot be recharged again, dispose of the battery properly according to local treatment regulations.
Remote control battery:
The remote requires 2 "AAA" batteries (not included).Read the important battery safety warning below.
- Do not mix with alkali, standard (carbon zinc) and rechargeable batteries (nickel hydrogen).
- Don't mix old and new batteries.
- Prohibits charging non-rechargeable batteries.
- Rechargeable batteries should removed from the remote control (if removable) before being charged.
- Rechargeable batteries can only be used under adult supervision.
- Batteries shall be disassembled as soon as they are exhausted and must be properly recovered or disposed in accordance with national or local government decrees and rules.
- Check supply terminals should not short circuit.
- Recommends using the same or the same type of battery.
- Battery shall be installed according to correct polarity (refer to internal specification).
- Don't throw batteries in the fire that could cause a leak or explosion.

⚠ Notice

LED indicator		Charging specification		
light on	light blink	input	charging current	full voltage
charge completed	charging	5V	1000mA	4.2V ±0.1V

Battery and charge specification			
battery type	battery specification	using time	charging time
Lithium batteries	3.7V	drone flight time :9-10mins	about 60 mins(charging current approx 0.8A)

APEX Flight adjustment and notice for beginners

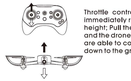
⚠Cautions

- Make sure there are no other people or obstacles in the flying area.
- In order to fly safely, you must first practice the hover, which is the basis of the flight action (hover: the drone stays in the air and maintains a fixed position).
- Please stand 2 meters behind the drone during practice.

The drone is default open the optical flow positioning function: the optical flow positioning system is applicable to the height of less than 5 meters, realizing the high-precision positioning and more smooth control, especially for indoor positioning and smooth flight.

1. Ensure clear and spotless for optical flow localization camera.
2. As the optical flow localization relies on the surface image to obtain the displacement information, please ensure that the ambient light source is sufficient and the ground texture is abundant.
3. The optical flow localization cannot be located in the water surface, dim light environment and the environment without clear texture on the ground.
4. During fast flight at low altitude (under 0.5m), optical flow localization may be unable to locate.

1.Throttle lever practice



Throttle control is in the left hand,push throttle rocker up slowly, immediately release the rocker, the drone will rise and hold at a fixed height; Pull the lever slowly down, and release the lever immediately, and the drone will descend and stay at a fixed height.Repeat until you are able to control the drone to any height, and you are stable settle down to the ground.

2.Direction control practice

1. Practice forward and backward, it's in the right hand up and down direction.Keep the drone at a certain height.Then fly one meter forward slightly,after the drone stabilized, fly back one meter .And repeat this practice.
2. Practice left and right side flying,it's in the right hand left and right direction.side.The method is the same as above.

⚠Caution

When the drone is flying far away, please lower the throttle and land the drone, then walk to the right astern of the drone for 2 meters and continuing the practice.Or bring it back to the home position keep practicing.

3.Rotation practice

1. Slowly raise the throttle lever to control the drone to a certain height.
2. Push the throttle lever to the left/right slowly, make the drone rotate counterclockwise/clockwise slowly.

4.Precision practice

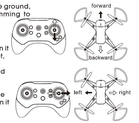
As you become familiar with the step 1~3, draw a circle on the ground and practice within the circle.It can increase your control accuracy.
As you get more comfortable with the action, you can draw smaller circles.

5.Change the direction of drone

When you feel familiar with Step 1-4, stand on the side facing the drone and continue to practice Step 1~4.Then, stand in front of the drone and repeat the steps.

6.Trim

Slowly lift the throttle lever. When the drone has just left the ground, if the drone tends to move around, you can used trimming to correct the action.



1. After the drone takes off,if the drone slowly shift to the forward/backward direction, you can press forward/backward (as shown in the figure) to adjust:When it forward offset,trim down to adjust;When it backward offset, trim up to adjust (Without controlling the direction, slight deviation belongs to normal condition,drone without fixed point function).
2. After the drone takes off,if the drone slowly shift to the left/right direction,you can press left/right (as shown in the figure) to adjust:When it right offset,trim left to adjust;When it right offset, trim left to adjust.

7.Obstacle avoidance mode

Obstacle avoidance and no obstacle avoidance 2 modes to choose.
1)Match code successfully, the default speed of the aircraft is one gear and the obstacle avoidance mode ,aircraft automatically avoids obstacles in the front/rear/left/right directions and detects obstacles in any direction (0.5~1.5 meters), which has the effect of automatic obstacle avoidance. The rated minimum distance of obstacle avoidance is 0.5 meters.
2)No obstacle avoidance in speed 2/3.
3)Mobile APP controls no obstacle avoidance function.
4)Obstacle avoidance is not sensitive to transparent obstacles and black/dark obstacles, and the obstacle avoidance effect is not accurate.

APEX Replace blades

In order to achieve the best flight function, the blades need to be inspected or replaced with new blades after multiple flights. Especially at high altitude, an emergency landing during mid-flight may damage the blades.
1. When replacing the blades, please make sure that the indicator letters on the blades are replaced accordingly (A is a forward rotating blade , B is a reverse blade, and the letter is in the back of the wind leaf).
2. Pay special attention to replacing the damaged blades with the blades that have been turned correctly. Never change the blade of the wrong direction!

APEX The application of App

- **App download and installation**

Download the App according to your mobile phone system model, as follows.
1. Android system (support Android 4.4 and above)
Method 1: Scan the QR code in the browser and download the App.
Method 2: Download and install the App in the Google play store, search for the keyword: "**Tspeed 7**".
2. Ios system (support IOS 10.0 and above)
Method 1: Scan the QR code to download
Method 2: Please go to the App Store to download and install the App, ch keyword: "**Tspeed 7**".

Android system

IOS system

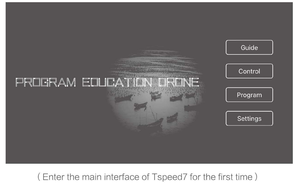
The Wifi connection

(1) please open your drone first and connect your mobile WIFI hotspot to Tspeed 7_XXXXXX ".
(2)Enter the APP.If the mobile APP is successfully connected to the drone, you can see real-time image transmission in the APP. It can be controlled remotely by a mobile phone.
(3) The remote control is invalid when the mobile phone controls the drone;
Mobile phone control is invalid when the remote control controls the drone.

⚠ Notice When opening wifi connection, positioning should also synchronize opening permissions.

- **Enter APP**

Click the Bluetooth name to enter the application

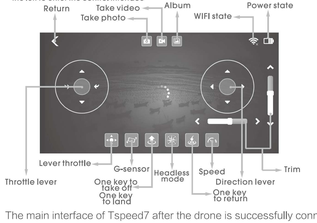


(Enter the main interface of Tspeed7 for the first time)

APEX APP application and description

- **Control interface**

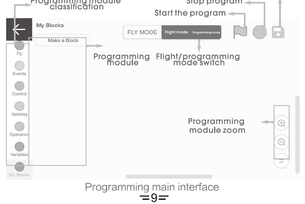
In the main interface of Tspeed7 as shown above, we click the "Control" button on the left to enter the control interface



The main interface of Tspeed7 after the drone is successfully connected

- **APP programming interface**

1. In the main interface of Tspeed 7 as shown above, we click the "Program" button on the right to enter the programming interface



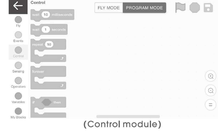
Programming main interface

APEX APP application and description

2. Flight module. As shown above, the flight module has take-off, landing, throttle, steering and other modules
3 . Event module. The event module includes clicking the green flag, loudness greater than a certain value, receiving a message, etc.

(Event module)

4. Control module. The control module has waiting time, repeated execution, judgment structure and other modules



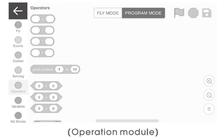
(Control module)

5. Detection module. The detection module has throttle, rotation, front and rear, left and right, etc.

(Detection module)

APEX APP application and description

6. Operation module. The calculation module has four arithmetic, random number, numerical judgment and other modules



(Operation module)

7. Variable module

(Variable module)

8. Module zoom, interface drag bar. The lower right corner of the main programming interface is the zoom control of the programming module, which is easy to zoom in and out, and the programming module is easy to read. The plus sign is to enlarge the icon, the minus sign is to reduce the icon, and the equal sign is to return to the default size icon. The horizontal and vertical two interface drag bars are convenient to drag this interface to read the programming module.

(Module zoom icon)

APEX APP application and description

9. 11.Execution and stop. The green flag in the upper right corner of the main programming interface is the execution button of the module programmed in the current interface. The red graphic is the stop button, click it to stop the execution of the programmed module.

(Module save icon)

10 .Perform programming. First click the programming module classification on the left, for example, click the event classification in the following figure. Then hold down another programming module, drag it to the blank interface on the right, and then drop it. For example, when the green flag is clicked and dragged to the right of the module, this completes the programming of a module.

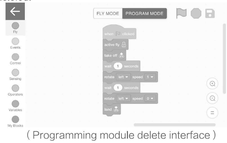
(Programming process)

Then repeat this process, drag other required programming modules to the previous right module and get stuck. The case as shown in the figure below:

(Programming case)

APEX APP application and description

11 .Delete the programming module. If some programming modules are used incorrectly, they can be deleted from the main programming interface. The operation method is as shown in the figure below. For example, if we want to delete the "Landing1" programming module, drag the module to the left interface, and then drop the programming module in this area, the module will be deleted.



(Programming module delete interface)

APEX Problem shooting

	Troubles	Causes	Solutions
1	Turn on the drone ,LED blinks , while the drone has no responding to all commands	Pair between drone and controller failed	(please refer to the frequency alignment of remote controller and receiver in P3)
2	Turn on the drone ,the drone has no reaction to the commands	The battery died	Charge the drone
3	Blades keep moving after landing	Throttle lever is not at the zero position	Put the throttle lever to zero position
4	Blades keep moving ,while the drone can not take off	1.Blades may installed wrong 2.No enough power	1.Change the blades 2.Charge the drone
5	After trimming ,drone keeps spin,and the speed of blades is different	1.Blades may installed wrong 2.Blades get damaged 3.Calibration failed	1.Install the blades 2.Replace the blades 3.Refer to p3 for calibration
6	The drone can not take off after drop	1.Blades are getting lose 2.Blades get damaged	1.Tighten the blades 2.Replace the blades

⚠ warning:
Children under 14 are prohibited to use

MADE IN CHINA

IM-G149-EN-01

APEX

1	Attention
2	Standard components Name of components
3-5	Controller instruction Battery installation Calibration between drone and controller Controller's function Correct operations of drone Charging
6-8	Flight adjustment and notice for beginners Replace blades Insert and unplug the battery picture The application of App
9-13	APP application and description Problem shooting

GD-149

User Manual

FCC Warnning:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection againstharmful interference in a residential installation. This equipment generates, uses and can radiateradio frequency energy and, if not installed and used in accordance with the instructions, maycause harmful interference to radio communications. However, there is no guarantee thatinterference will not occur in a particular installation. If this equipment does cause harmfulinterference to radio or television reception, which can be determined by turning the equipmentoff and on, the user is encouraged to try to correct the interference by one or more of thefollowing 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.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device 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.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 0cm between the radiator and your body.