

# Hesper

User Manual V1.0  
2018.1

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## Legend

### Symbols



Warning



Tips

### Reading Suggestions

*HIGHGREAT has provided the following manuals*

*for Hesper users: (In the Box)*

*(Battery Safety Instructions*

*Disclaimer) (Hesper Quick*

*Start Guide)*

*(Hesper User Manual)*

*(Qualified C)*

*To learn how to use Hesper, we suggest you read the provided manuals in this order: (In the Box), (Battery Safety Instructions), (Disclaimer) and then (Hesper Quick Start Guide). If you want to learn more, please read (Hesper User Manual).*

### Downloading the App

Before using this product, you need to download and install the Hesper app. You can scan the following QR codes, or search for Hesper in App Store or Google Play, or login and download from HighGreat website.



Hesper supports Android 4.3 and later versions, iOS 9.0 and later versions.

## Product Profile

*This section will introduce Hesper's features and the names of Hesper's structural components.*

### Introduction

Hesper is a portable and easy-to-use drone for entertainment. It consists of the aircraft itself and an accompanying app. Through using the app, you can control Hesper's flight, Hesper photos and record videos.

### Features Highlights

In order to give you a convenient and safe flying and photographing experience, Hesper has various great features:

### FlightGo

The app is specifically developed for Hesper and is really simple to use. It can be used as a remote controller for flight control and photo & video shooting.

### Remote Controller

Hesper can be operated by both remote controller and APP in smart phone. Remote controller is specially designed and has a different experience when flying. It will have an individual user manual.

### Mechanical Gimbal

One-axis mechanical gimbal can support wider angle shooting when flying. Can operate the angle of camera by remote controller or APP..

### Visual Positioning

Hesper uses the optical flow and ultrasonic positioning system to support flight. When there is no GPS signal or weak GPS signal, please install propeller protector when indoors flying.

### High Definition Photo & Video Shooting

Hesper is equipped with a professional high definition camera- SONY IMX 214, 13MP, that supports 4208x3120 photo shooting and 1920x1080 video shooting.

### EIS (Electronic Image Stabilisation)

After EIS, your 4K video footage becomes 1080p high definition videos, and image vibration

whenHesperflyingcanberemovedunderEIS.

### **Target Tracking**

By image recognition technology, Hesper can follow and record video on the moving target you've chosen.

### **Orbit**

Automatically fly and record video around a certain point with a certain radius and at a certain altitude.

### **Intelligent Operation**

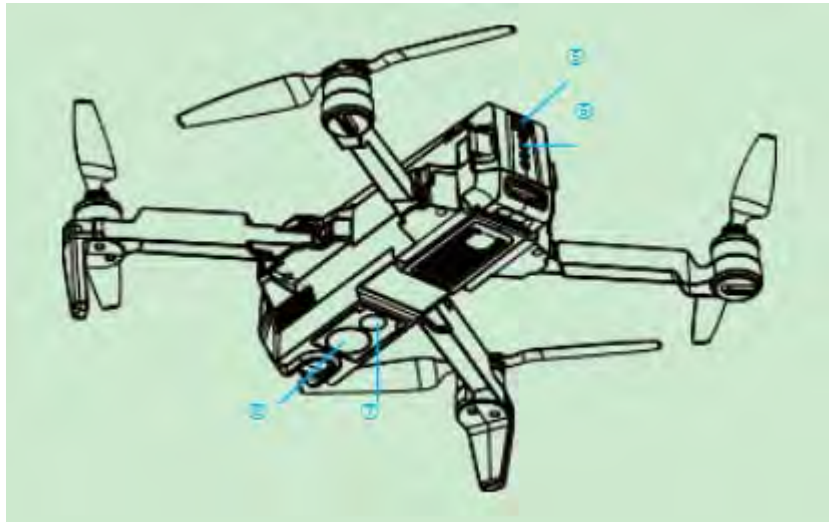
When outdoor flying, FlightGo support multiple One-key Operations by just one tap on the screen. Such as One-key Hesperoff, One-key Landing, One-key Return.

### **One-Key Sharing**

Directly share your photos & Videos with your friends on SNS.

### **Aircraft Diagram**

- ① *Propeller*
- ② *Arm*
- ③ *Camera*
- ④ *Battery*



- ⑤ switch
- ⑥ indicator light
- ⑦ optical flow
- ⑧ Ultrasonic

# Aircraft

## Aircraft Profile

Hesper mainly consists of the flight system, the positioning system, the communication system, the power supply system and the camera system.

This section will explain the functions of each of the parts.

## On/Off Switch and Power Indicator

The On/Off Switch has an inbuilt Power Indicator.

Hold the On/Off Switch for 3 seconds. Wait until the Power Indicator starts solid green, then remove your finger and Hesper will switch on. After a few seconds, Hesper will make a noise alerting you that the ESC has turned on.

After connecting to the app, the Power Indicator will turn flash green.

Hold the On/Off Switch for 3 seconds. Wait until the blue light of the Power Indicator goes

out, then remove your finger and Hesper will switch off.

## Aircraft Status Indicator

On the tail of the aircraft, there's an RGB indicator that shows the status of Hesper. The Aircraft Status Indicator's status and the corresponding meanings are as follows:

INDICATOR	COLOR	MEANING
Normal Status		
	Slow Green Flashing Green Double Flash	Normal Status Optic Flow and Ultrasonic Positioning
Assistant Prompts		
	Solid Light Blue Light Blue Double Flash	Horizontal Compass Calibration work Horizontal Compass Calibration not work
	Solid Blue Blue Double Flash	Vertical Compass Calibration work Vertical Compass Calibration not work
	Solid Blue for 3s	Hold And Power Off
Warning And Abnormal Status		
	Red Double Flash	Critical Battery Warning
	Slow Red Flashing	Low Battery Warning
	Solid Red	No-Fly Zone Warning
	Light off	GPS Failure
	Red-Blue Alternate Flashing	Other Failure

## GPS Positioning

Hesper uses a GPS&GLONASS dual-mode satellite positioning system. The satellite positioning system is GPS based, with GLONASS acting as a supplementary system. During outdoor flights, Hesper uses GPS positioning when the number of searched-out GPS satellites  $\geq 8$ .

## Optic Flow and Ultrasonic Positioning

Hesper will use the optic flow and ultrasonic positioning during indoor flight. If the GPS signal is weak (the number of searched-out GPS satellites  $< 8$ ) during outdoor flight, the aircraft will automatically use optic flow and ultrasonic positioning as supplements.

## Usage Conditions and Restrictions

The optic flow and ultrasonic positioning system are used for indoor flight. It is also used for outdoor flight if the GPS signal is weak. The operating height range for this positioning system is 0.5-3m.

When using this positioning system, after the aircraft has Hespern off and ascended to 0.5m, it will determine if the requirements for using this system have been met. If they have not, it will initiate landing. If the requirements are not met for this system during flight, the aircraft will also initiate landing.

Requirements for the optic flow and ultrasonic positioning system: When using this system,

the area underneath the aircraft needs to have a clear textured surface.



*The optic flow and ultrasonic positioning system may not work under these circumstances, please use with caution:*

- ⦿ Above highly reflective surfaces;
- ⦿ Above water or transparent objects;
- ⦿ Above people or moving objects;
- ⦿ In areas with rapidly changing/flashing lights;
- ⦿ Above very bright or very dark surfaces;
- ⦿ Above objects that easily absorb ultrasonic waves;
- ⦿ Above surfaces without clear textures or with too sparse or too dense textures;
- ⦿ During fast flight at low levels (0.5m or less), the optic flow and ultrasonic positioning system may not work.



- ⦿ Ensure that the lens of the optic flow camera is clear.
- ⦿ Because the ultrasonic positioning system may be disturbed by ultrasonic waves emitted by other ultrasonic equipment, please do not use Hesper near other ultrasonic equipment, including other drones.
- ⦿ The Ultrasonic Sensor will emit ultrasonic waves that are inaudible to humans but may make some animals nervous. Please do not use Hesper close to animals.

## Propeller

Hesper has 4 sets of foldable Propellers. The propeller blades are already mounted; users only need to expand the Arms before the flight. When you're done with flying, fold the Arms and the blades to prevent damaging them.

The blades have either "H" or "G" on the top to indicate in which direction they spin, as shown in the following figure:

## Replacing the Propeller Blades

Blades must be replaced with ones that spin in the same direction. Blades with an "H" on top must be replaced with ones that also have an "H". Blades with a "G" on top must be replaced with ones that also have a "G", as in the above figure on Page 8.

How to replace the propeller blades:

Use a wrench or a screwdriver to loosen the screws, remove the old ones and mount the new ones onto the base, as shown in the following figure:



Please ensure that the propeller is tightly screwed in, to prevent against the screws coming loose and the propeller blades coming off during flight. It will need to be re-tightened after every 10 hours of flight.

## Battery

The battery is designed specifically for use with Hesper. It has a rated capacity of 1450mAh and a nominal voltage of 11.4V.

## Using the Battery

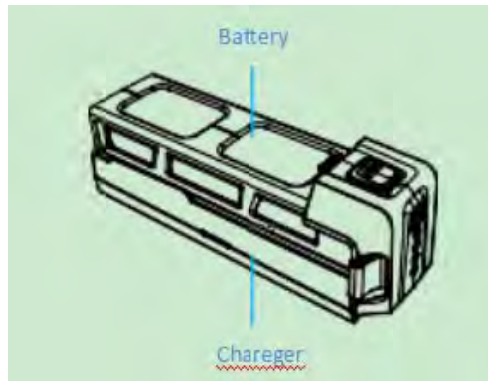
Please plug the battery into the battery compartment before using Hesper.

---

- ⓘ Please don't remove the batteries while the aircraft is turned on.
  - ⓘ Battery overheating may affect the performance of Hesper. Do not use it in hot environments (over 40°C).
  - ⓘ If the battery leaks, emits an odor, generates heat by itself, changes shape (swells, etc.), changes color or shows any other abnormalities during use, charging or storage please remove the battery immediately and cease to use.
  - ⓘ Do not use the battery in cold environments (under 50C), or it may cause irreversible damage to it. When the temperature is low, the battery's usage time may drop. Please warm it up to 5°C or higher before plugging it into the aircraft, 200C or higher is better.
- 

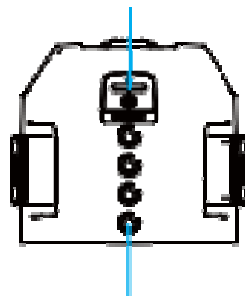
## Charging the Battery

The battery comes with a charger, an adapter, and a USB cable.



The battery charger's major characteristics are as follows:

- ⓘ Balance Charging Protection: Automatic balance of the battery's internal



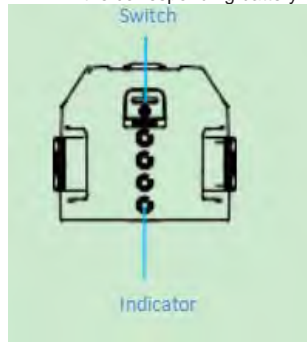
cell voltage

to preserve the battery;

◎ Overcharge Protection: Overcharging can seriously damage the battery. The battery will stop charging once it's charged to 13.05V;

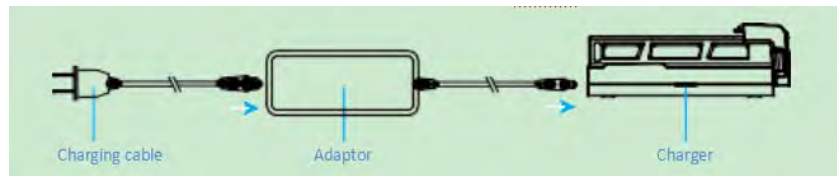
◎ Battery Fault testing: stop charging once test and find battery internal fault, overheat and so on, warning with flash red light.

Put the battery into the battery charger, the indicator will show the current battery level and go out automatically after 5 seconds. The indicator's status and the corresponding battery level in percentage are shown as follows:



◆◆◆◆	100%
◆◆◆◆◆	75%~100%
◆◆◆◆◆	50%~75%
◆◆◆◆◆	25%~50%
◆◆◆◆◆	0%~25%

Plug the battery down into the charger. Use the USB cable to connect the charger to the adaptor. Plug the adaptor into a power socket to begin charging.



The charger uses Qualcomm Quick Charge 3.0 technology. Using it together with the accompanying adapter allows for quick charges. The Charging Status Indicator will be fast flash green during the quick charge. If you don't use the provided adapter, it may only achieve slow charge instead. The Charging Status Indicator will be slow flash orange during the slow charge.

If the Charging Status Indicator turns solid green, this means the battery is fully charged. Please turn off the power source and remove the battery from the charger.

The Charging Status Indicator's status and the corresponding meanings are shown as follows:

Indicator	Color	Meaning
	No Display	Not Charging
	Small Light Show Battery For 5 Minutes	Indicat Current Battery
	Solid Green(Both)	Charging Completed
	Fast Green Flashing	Fast Charging
	Slow Orange Flashing	Slow Charging
	Fast Red Flashing	Failure

© We suggest you use the provided HighGreat Hesper battery charging devices to charge the battery. Any issues that occur due to use of other charging equipment shall be the responsibility of the user.

© Do not charge batteries in the aircraft by connecting Micro-USB to a power source. If not it shall be the responsibility of the user.



© Users can use a power bank or a car charger to charge the battery. Plug the battery down into the charger, and use the USB cable to connect the charger to the power bank or car charger to begin charging.  
© The adapter can only be used below 2000m above sea level.

## Camera

Hesper is equipped with a professional high definition camera- SONY IMX 214,13MP, that supports 4208x3120 photo shooting and 1920x1080 video shooting.

## Mechanical Gimbal

Hesper is equipped with a one-axis mechanical gimbal, user can change the camera angle by remote control or APP.

## Remote Controller

Hesper can be operated by both remote controller and APP in smart phone. Remote controller is special designed and have a different experience when flying. It will have a individual user manual.

## Signal Frequency

Aircraft have two version for the signal frequency-2.4GHz/5.8GHz. Different versions should relate to the mobile with relative bands. Please check the aircraft frequency from the package.

## Micro-USB Port

While Hesper is turned on, use the provided USB cable to connect Hesper to your computer. You can then copy your photos and videos onto your computer.



© Hesper must be turned on to be able to connect to your computer.

© Hesper' s Micro-USB port can only be connected to data communication ports, do not connect it to power sources or power banks.

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## Reset Button

Hold down the Reset Button on the base of the aircraft for 3 seconds until the Aircraft Status indicator finishes blue, so as to reset the Wi-Fi, The default SSID and password:

SSID: Hesper-XXXXXX. Labeled beside the battery compartment on the base of the aircraft, the XXXXXX are THE LAST 6 alphanumeric digits of the Wi-Fi's MAC address  
Password: highgreat

# App

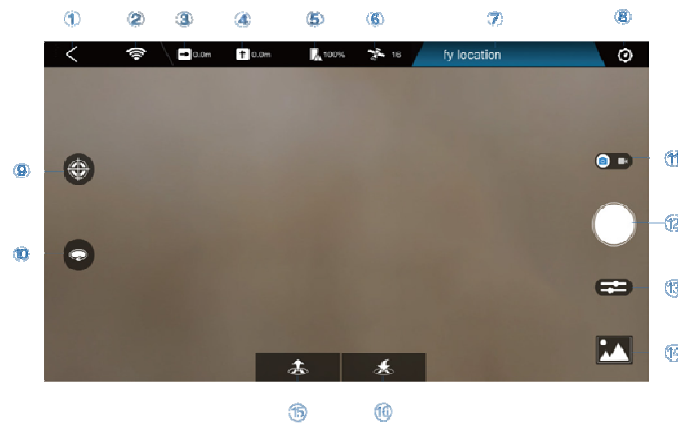
This section will cover the main parts of the FlightGo and the settings.

## App Profile

FlightGo is specifically developed to be used with Hesper. Users can use FlightGo as a remote controller for flight control and photo & video shooting. You can also directly share your photos and videos to social networks.

## App Operation Interface

All the necessary status indicators and main function buttons are on the operation interface. The layout is as follows:



- |                           |                            |                            |
|---------------------------|----------------------------|----------------------------|
| 1. Back to main interface | 2. Wi-Fi Connection Status | 3. Current Flight Distance |
| 4. Current Flight Height  | 5. Aircraft Battery        | 6. Positioning Status      |
| 7. Status Bar             | 8. APP Settings            | 9. Target Tracking         |
| 10. Orbit                 | 11. Photo/Video Switch     | 12. Shutter                |
| 13. Camera Setting        | 14. Media Library          | 15. Hesperoff/Landing/Stop |
| 16. Return to Home        |                            |                            |

Here's a brief description of these status indicators and function buttons. For more details on

flight-control and camera operation, please refer to "Flight/Shooting" on page 23.

### 1. Back to main interface



Return back to the main interface after clicking it, you can enter into a personal interface in the main interface.

### 2. Wi-Fi ConnectionStatus



Wi-Ficonnected



Wi-Fidisconnected



If the Wi-Fi connection is lost during flight, Hesper will return and land if the GPS positioning is being used or initiate landing if the optic flow and ultrasonic positioning are being used.

### 3. Current FlightDistance



The current flight distance will be displayed after the icon.

### 4. Current FlightHeight



The current flight height will be displayed after the icon.

### 5. AircraftBattery



Full battery (The battery level will be displayed in percentage after the icon)



Low battery (The battery level will be displayed in percentage after the icon)



Once the battery level gets too low during flight, Hesper will initiate landing.



- ⦿ A full charged battery will allow for approximately 16 minutes of flight time.
- ⦿ Please schedule your shooting progress according to the current battery level, and charge the battery timely.

## 6. PositioningStatus



Positioning status normal (The number of searched-out satellites will be displayed after the icon. The number  $\geq 8$  means normal)



GPS positioning status abnormal (The number of searched-out satellites will be displayed after the icon. The number  $< 8$  means abnormal)



Optic flow and ultrasonic positioning status normal



Optic flow and ultrasonic positioning status abnormal



If the positioning status gets abnormal during flight, Hesper will start to hover until the positioning status returns to normal or user lands it.

## 7. StatusBar

The status bar will display the current status information. Different levels of status will be displayed in different colors; red-abnormal status, yellow-status warning, blue-normal status. The abnormal status will be displayed by priority if there are several pieces of status information. Tap to see the fault status information.

## 8. APPSettings



Tap to enter the app setting.

Some of the settings will need access to the Internet by using mobile data or switching to router Wi-Fi.

## 9. TargetTracking



Aircraft automatically follow the chosen target and record video.

## 10. Orbit



Aircraft automatically fly around the chosen target and record video.

## 11. Photo/VideoSwitch



*Toggle to switch between the main interface and the conventional video recording interface.*

## 12. Shutter



Tap to Hesperphoto(s)/Video(s)

## 13. CameraSetting



Tap to enter the camera settings:

Modes



Single shot: Tap to enter the single shot mode



Burst shot: Tap to enter the burst shot mode and select how many photos to Hesper.

Parameters AWB: Tap to set the white balance

EV: Tap to select the exposure value

## 14. MediaLibrary



Tap to enter your media library.

## 15. Hesperoff/Landing/Stop



Tap to initiate Hesperoff.

Tap to initiate landing.

Tap to stop during Hesperoff/landing.

## 16. Return toHome



Aircraft automatically return to the Hesperoff point and land.

## App Settings

### Compass Calibration

FlightGo will assist compass calibration. Details please refer to

“Compass Calibration” on Page 29.

### Photograph Vibration

It's turned off by default. When it is activated, your mobile device will vibrate after taking photos.

### App Mute

It's turned off by default. When it is activated, your mobile device will be mute when the app is used.

### Control Method

It's set to “Safe Sticks” by default.

FlightGo comes with 3 control methods that users can choose between

“**Motion Sensing**”, “**Free Sticks**” and “**Safe Sticks**”.

The motion sensing method uses your mobile device's gravity sensor. It allows you to control Hesper's flight by tilting your mobile device. For specific operation, please refer to “**Motion Sensing Method**” on page 27.

Just like the remote controller, the free sticks method allows you to control Hesper's flight by holding the virtual sticks and toggling up/down/left/right. For specific operation, please refer to “**Free Sticks Method**” on page 30. **You can choose between “Mode 1”(right-hand throttle) and “Mode 2” (left-hand throttle).**

Just like the remote controller, the safe sticks method allows you to control Hesper's flight by tapping on the arrows on the four directions in the virtual sticks. For specific operation, please refer to “**Safe Sticks Method**” on page 32. **Also, you can choose between “Mode 1”(right-hand throttle) and “Mode 2” (left-hand throttle).**

### Change Wi-Fi Information

You can change the Wi-Fi's SSID and password. The SSID can be up to 16 characters. The password has to be between 8-20 characters long and can be made up of numbers, letters and/or special characters.

### **HesperFCUpdate**

Upgrade the aircraft flight control through APP.

### **Hesper OS Update**

Upgrade the aircraft operating system through APP.

### **Available**

Check the available storage space on Hesper. Please schedule your shooting progress according to the available storage space and timely clear Hesper's memory.

### **Personal Center**

#### **Setting**

#### **Quick Guide**

Download Hesper Quick Start Guide, which may help you to learn to use.

### **Malfunction Report**

Please describe the fault information, we will receive the first time to reply to you.

### **Suggestions and Feedback**

Enter your feedback, we give you the first time to reply.

### **Change Password**

You can change your personal login password.(not aircraft WiFi connection password)

### **Language**

Several Choice for Languages.

### **About**

HighGreat Website, User Agreement, etc.

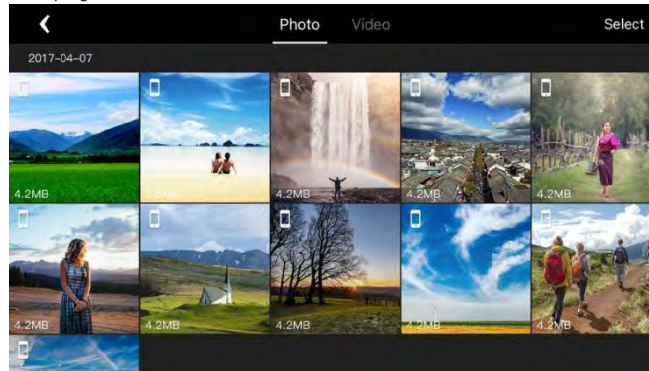
### **Media Library**

When opening the media library, it will go to the photo gallery by default. Tap the "Video" button at the top of the screen to switch to the video gallery.

### **Photos**

When you are connected to Hesper's Wi-Fi after you Hesper photos, the thumbnails will automatically be sent to your mobile device. The photo gallery displays thumbnails in date order. Swipe up to load more thumbnails and swipe down to load new thumbnails.

If a photo is already downloaded to your mobile device, a mobile phone icon will be added to the top right-hand corner of the thumbnail.



## Selecting Photos

Tap the photo to select. To select all the photos Hespern in one day, tap the "Select All" next to the date.

## Deleting Photos

After selecting photos, tap the "Delete" button in the upper right-hand corner of the screen to remove them from your media library. When you are connected to Hesper's Wi-Fi, it will delete the files from Hesper. When the Wi-Fi is not connected, it will not delete the files from Hesper. The browsing page also has a "Delete" button, so you can delete photos directly.



When an Android device is connected to Hesper's Wi-Fi, it will ask you to choose to delete from the mobile device or from Hesper.

## Downloading & Browsing

After selecting photos, tap the “Download” button in the bottom of the screen to download them to your mobile device. You can also download and browse a photo by tapping on the thumbnail. You can directly download and browse the previous/next photo by swiping left/ right on the photo browsing page. Tapping on a photo will make it full screen.



*If you have an iOS device, allow access to your gallery in system settings, otherwise, you will only be able to tap the “Download” button in the top right-hand corner to download photos to your gallery. Other downloading methods will download photos into a new folder and won’t be able to download photos to your gallery.*

## Photo Sharing

There is a “Share” button on the browsing page, tapping it will directly share your photos to your SNS.



*Sharing your photos will need to access the Internet by using mobile data or switching to router Wi-Fi.*

## Videos

Browsing through videos is basically the same as browsing through photos, but to download videos to your mobile device you need to tap the “Download” button on the top right-hand corner after selecting them. There will be a progress bar during the download. You can download multiple videos at the same time. You can also background download. There’s a “Share” button on both the video gallery page and the playing page. You can share your videos directly with your friends on SNS.



*iOS mobile device users, please allow access to your gallery in system settings, otherwise, you will only be able to download videos into a new folder and not into your gallery.*

## Flying/Shooting

Before flying please read Disclaimer and Battery Safety Instructions to understand the safety precautions. This section will cover what you need to know and how you need to prepare before flying Hesper, as well as detail on flight and photo & video shooting operations.

### Flight Environment Requirements



We suggest you conduct the first flight in an open outdoor area, and you can turn off the novice mode to conduct indoor flight after getting familiar with the flight control.

### Outdoors

1. Don't fly Hesper in bad weather conditions, such as in high wind, rain, snow.
2. When flying, always keep Hesper in your line of sight. Ensure that you avoid obstacles, high voltage wires, trees and shrubbery, groups of people, bodies of water.
4. Please fly in an open area, do not fly near buildings and keep a good distance from tall buildings, for fear that the GPS signal would be blocked.
6. Do not fly near complex electromagnetic environments, such as near signal tower, base station, for fear that the Wi-Fi signal would be interfered.
8. Do not fly near areas with abnormal magnetic fields, for fear that the compass would be interfered. Hesper cannot fly in the north and south poles.
9. Flight height should be less than 120 meters, it shall be the responsibility of the user if flight height is over 120 meters.
11. In areas 3000m or higher above sea level, the flight performance may be affected due to environmental conditions. Please use with caution.
13. If the GPS signal is weak, Hesper will use the optic flow and ultrasonic positioning. Please fulfill the requirements for the optic flow and ultrasonic positioning, see "Usage Conditions and Restrictions".

### Indoors

1. During the indoor flight, Hesper uses the optic flow and ultrasonic positioning. The flight area needs to be above a clear textured surface.
2. Indoor flight needs to be conducted in a well-lit area (luminosity > 15 lux).
3. During fast flight at low levels (0.5m or less), the optic flow and ultrasonic positioning system may not work.

### Flight Restrictions

- © Maximum ascent height under the GPS positioning: 50m.

- ◎ Maximum ascent height under the optic flow and ultrasonic positioning: 3m.
- ◎ Maximum control distance: 120m (in open air free of interference).

## No-Fly Zone

Please do not fly in areas where flying is illegal or restricted.  
According to regulations, 10km surrounding areas of airports are strictly no-fly zones.  
In no-fly zones, Hesper will not be able to fly while using the GPS positioning. The Aircraft Status Indicator will be slow yellow flashing. The app will prompt the no-fly zone warning.

## Preflight Checklist

Please check the following items before flying. You can Hesper off only if all of the items are

OK:

1. Check that Hesper and your mobile device have enough power;
2. Check that the Arms are fully expanded;
3. Check that the propeller blades and other parts of the aircraft are not loose or damaged;
4. Check that the lenses on both the optic flow camera and the front-facing camera are clean.

## Calibrating the Compass

Hesper relies on the compass to determine its heading.  
The compass is easily interfered by other magnetic materials and electronic devices. This can lead to data inaccuracies, unsafe flight, even crash. And the on-site magnetic field condition also affects the accuracy of the compass. So, regular calibrations before flight help the compass to work at its best.

---

*You're required to calibrate your compass in the following cases!*



*Before the first flight, and before the first outdoor flight;*

- ◎ The location you are flying is quite far from the last location you flew;
- ◎ The Aircraft Status Indicator is fast purple flashing, indicating compass failure;
- ◎ The Aircraft drifts severely, for example: cannot fly straight.

*Expand the arms before calibrating, so as to avoid interference.*

*Do not calibrate your compass near large metal objects or in places with strong magnetic field interferences.*

*Do not place Hesper close to other magnetic materials and electronic devices (such as magnet, mobile phone, tablet PC and stereo equipment).*

---

The process of compass calibration is as follows:

Expand the Arms. Turn on the aircraft. Connect to the aircraft's Wi-Fi. Enter Hesper's

“Settings” - “Compass Calibration” , and tap on “Start” .

1.Keep the aircraft horizontal (the Aircraft Status Indicator will turn solid green if it's set to the required angle). Slowly rotate it 2-3 times. During this rotation, make sure the indicator stays solid green, which means calibration goes well. Or you will need to adjust the aircraft's angle once again. The app will automatically jump to the next step once it's done.

2.Keep the aircraft head downwards vertically (the Aircraft Status Indicator will turn solid white if it's set to the required angle). Slowly rotate it 2-3 times. During this rotation, make sure the indicator stays solid white, which means calibration goes well. Or you will need to adjust the aircraft's angle once again.

3.The app will notify you once the calibration is completed. At this point, the Aircraft Status Indicator will show the aircraft's actual status.



⌚ After the horizontal calibration, immediately begin the vertical calibration, don't stop midway.

⌚ The calibration will be effective immediately (no need to restart the aircraft).

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## Flight Protection

In order to ensure safe use and to avoid damage, HIGHER has fitted Hesper with multiple flight protection measures:



⌚ If the battery level gets too low or a major failure occurs, Hesper will immediately land.

⌚ If both the GPS and the optic flow and ultrasonic positioning systems are not working, Hesper will start to hover until the positioning status returns to normal or user lands it. But if the battery level gets too low while hovering, Hesper will initiate landing.

⌚ If the Wi-Fi connection is lost or the app drops out, Hesper will return and land if the GPS positioning is being

used, or initiate landing.

⦿ if the optic flow and ultrasonic positioning are being used.

⦿ When the app is minimized or you get a phone call, Hesper will start to hover until you are back to the app. But if the battery level gets too low while hovering, Hesper will initiate landing.

⦿ When flying indoor or outdoor where are crowds of people, please add propeller protector for aircraft.

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## Connecting the Aircraft to Hesper

Connect your mobile device to the aircraft's Wi-Fi. The default SSID(WiFi name) is like

Hesper-XXXXXX. Click to connect this SSID, and input the default password is highgreat. And you can change them in "App Settings" .

Check if it shows that it's connected to the Wi-Fi, that the aircraft's battery level is high, and that the optic flow positioning status is normal or the GPS positioning status is normal. If so, it's ready to fly, and you can Hesper off.

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⦿ When flying, keep Hesper in your line of sight. Please ensure you keep Hesper a safe distance away from people.

⦿ Hesper extra care not to run into people or objects during indoor flight.

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## Hesper off/Landing

### Hesper off

Tap it, Hesper will directly Hesper off and ascend to 1.5 meters (1 m for indoors).

### Landing

Tap it, it will start to descend and land onto the ground.

## Flight Control



⌚ During your first flight, please begin with operating on a small scale. Pay attention to the flight direction and adjust the flight speed, slowly working towards moderate-scale operation.

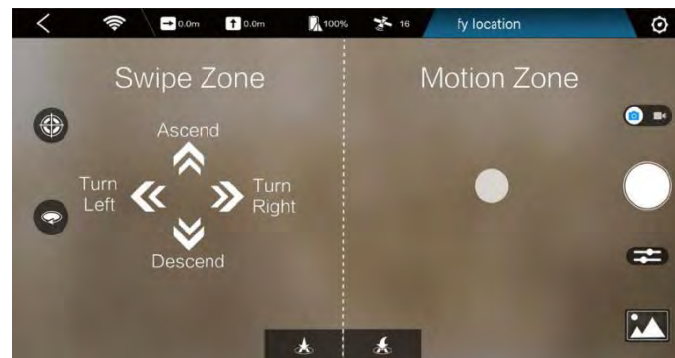
⌚ Please don't operate on a too large scale, so as to avoid accidental collision.

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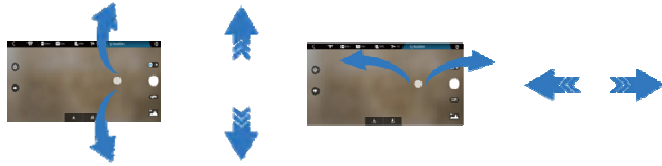
## Motion Sensing Method

Using your mobile device's gravity sensor system, you can control flight by tilting your mobile device.

The left-hand half of the screen is the swipe zone which controls ascent/descent and direction; the right-hand half is the motion zone which controls flying forward/backward/left/ right, as in the picture below:

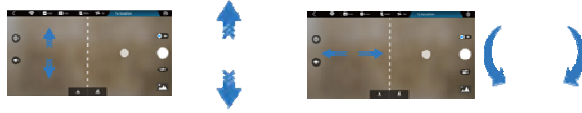


Fly forward/backward/left/right: Your mobile device tilted within 45° from horizontal, hold down on any part of the right-hand half (motion zone) of your screen, and tilt your mobile device forward/backward/left/right. For fear of misoperation, the motion sensing can be activated by holding down on the screen only when the mobile device's angle from horizontal is within 45°.



Ascent/descent: Swipe the left-hand half (swipe zone) of your screen left/right. Swipe and hold to continue the movement.

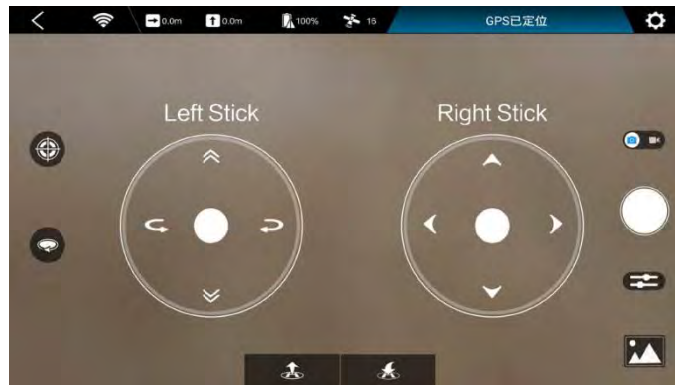
Swipe the left-hand half (swipe zone) of your screen up/down. Swipe and hold to continue the movement. Turn left/right:



## Free Sticks Method

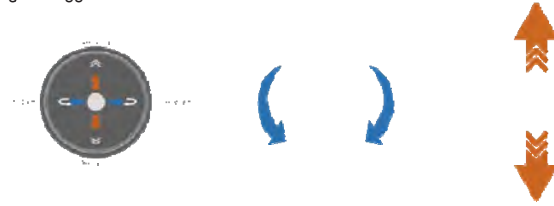
Just like the remote controller, the free sticks method allows you to control Hesper's flight by holding the virtual sticks and toggling up/down/left/right.

Hesper the American Operator mode as an example, the left stick controls ascent/descent and direction (left-hand throttle); the right stick controls flying forward/backward/left/right, as in the picture below:

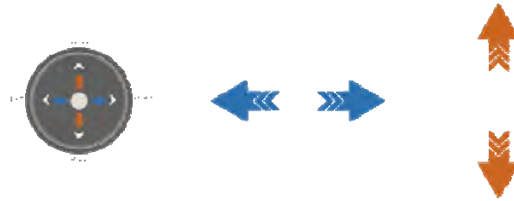


Ascent/descent: Hold down on the left stick (the dot at the center of the left circle) and toggle up and down. Toggle and hold to continue the movement.


Turn left/right: Hold down on the left stick (the dot at the center of the left circle) and toggle left and right. Toggle and hold to continue the movement.



Fly forward/backward/left/right: Hold down on the right stick (the dot at the center of the right circle) and toggle up/down/left/right. Toggle and hold to continue the movement.



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 Hold down on any part of the left side of the screen, and the left stick will follow to the point where you hold down; so it is for the right stick.


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### Safe Sticks Method

Just like the remote controller too, the safe sticks method allows you to control Hesper's flight by tapping on the arrows on the four directions in the virtual sticks.


The operations of the safe sticks method are similar to the free sticks method. However, it uses tapping on the arrows on the four directions instead of toggling. For the details, please refer to "Free Sticks Method" on page 30.


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 © After choosing "Safe sticks", you can choose between "American Operator" (left-hand throttle) and "Japanese Operator" (right-hand throttle).

## Taking Photos/Video Recording



### Taking Photos

Single shot: In the single shot mode, every time you tap the  "Shutter" button, it will Hesper one photo.

Burst shot: In the burst shot mode, every time you tap the  "Shutter" button, it will Hesper a series of burst shot photos.

You can Hesper photos using the volume buttons on your mobile device or earphones. It is the same method as using the  "Shutter" button.





*The default mode is set to single shot. You can tap the  "Camera Settings" button to switch between the single shot mode and the burst shot mode, and select how many photos to Hesper (3 photos by default) in the "Modes" menu. Please refer to "Camera Settings" on page 17.*  
*The photo timer is closed by default. You can tap the  "Photo Timer" button to activate the photo timer and select the countdown. Please refer to "Photo Timer" on page 17.*

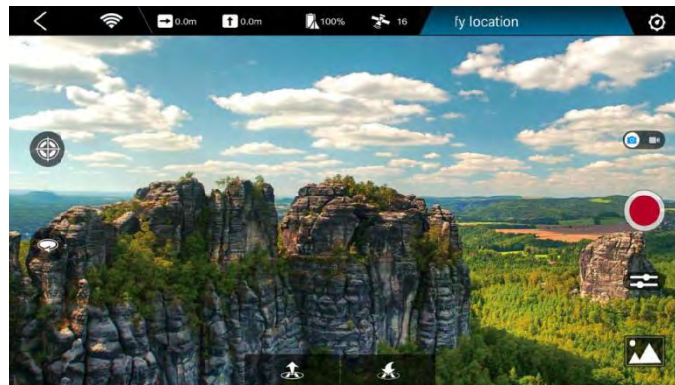
### EIS

EIS (Electronic Image Stabilization) can deblur the images of a video, eliminating jitter, jelly, etc. It applies to both the conventional video recording and the 10s auto-track short video recording. It defaults to switch on.

How to disable EIS: You can close EIS in "Camera Settings" - "Settings" - "EIS".

### Conventional Video Recording

1. Tap the Photo/Video Switch" to go to the conventional video recording interface.
2. The conventional video recording interface is as follows. Tap the  "Record" button to start recording. Tap the  "Stop Recording" button on the right-hand side of the interface to end your recording. Conventional video recording can last as long as you want. The duration will be displayed at the top of the interface.



*During the conventional video recording, you can use the motion sensing method, the free sticks method or the safe sticks method to control the flight.*

### **Orbit (Only under Outdoor GPS Positioning)**

Orbit enables the aircraft to automatically fly and record video around a certain point (the origin) with a certain radius and at a certain altitude.

When using it, first, you set the radius and the altitude to determine the orbit. Then, the aircraft flies backward and upward from the origin to the orbit. Finally, you control it to fly along the orbit counterclockwise or clockwise. Shown as follows (taking counterclockwise for example):

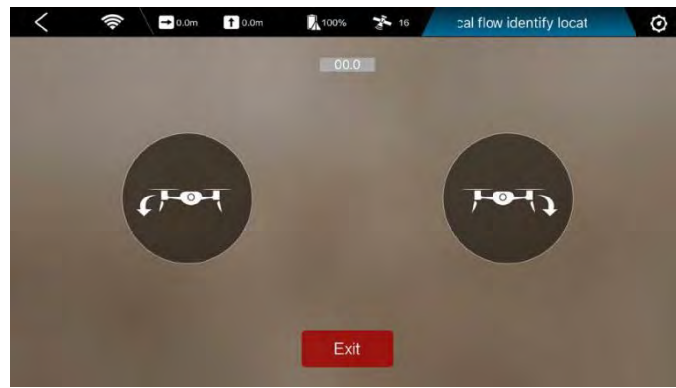
### How to use it:

1. Fly Hesper to any position (the origin). Then tap the “Orbit” on the left side of the interface, and select.
2. In the settings interface, drag the drone icon to the blue area to set the altitude and the radius of the orbit. The horizontal axis shows the radius, and the vertical axis shows the altitude. Please make sure that there is no obstacle near the orbit.



The aircraft will fly to the position where you drag it to. The radius and the altitude will be displayed on the screen as follows. After you've set the radius and the altitude, tap the “Start” button to go to the control interface.

3. In the control interface, the two round buttons respectively represent counterclockwise orbiting and clockwise orbiting, as shown below. Click the left button, and the aircraft will fly and record video around the origin counterclockwise with the set radius and the set altitude; Click the right button, and the aircraft will fly and record video around the origin clockwise. The duration will be displayed at the top of the interface.



©The short video feature can be used only for outdoor GPS positioning.

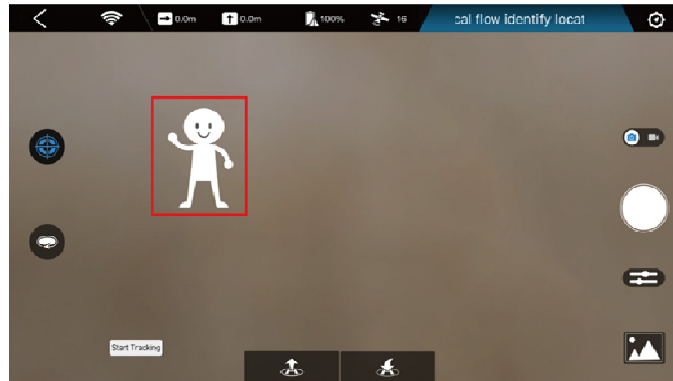
©Please be careful not to collide with other objects during orbiting. Release your finger off the button to stop if necessary.

## Target Tracking (Only under Outdoor GPS Positioning)

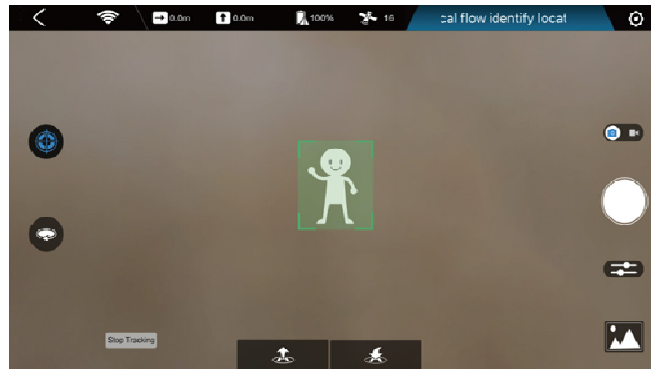
Target tracking enables the aircraft to automatically follow and record video on the moving target you've chosen.

How to use it:

1. Fly Hesper to over 3 meters above the ground. Then tap the bottom left-hand corner of the operation interface, and select list.
2. Draw a frame on the screen to select the target to follow. A red frame will show up. Cover the target with the red frame.



3. Tap the "Start Tracking" button in the bottom left-hand corner of the screen. The red frame will turn green, indicating the target tracking is started. When the target moves, Hesper will follow it.



4. After you've finished the target tracking, tapping the "Stop Tracking" button to quit.



- ⦿ The target tracking feature can be used only for outdoor GPS positioning.
- ⦿ If the illumination changes drastically, or the target moves too fast, makes a sudden turn or overlaps with a similar object, Hesper may lose the target.
- ⦿ Hesper will hover for next order if lose the target during the target tracking process.
- ⦿ Please be careful not to collide with other objects during target tracking. Tap the "Stop Tracking" button if necessary.

### **Return to Home (Only under Outdoor GPS Positioning)**

*Return to Home enables the aircraft to automatically return to the Hesperoff point and land. How to use it: Tap "Return to Home" in the bottom of the interface.*



- ⦿ If there are trees, utility poles, highline or other obstacles on the way of the return, Hesper may collide with it. Please confirm that there are no obstacles between the current position of Hesper and the Hesperoff point.
- ⦿ If it is about to collide, please tap the "stop" button, or immediately control it to avoid the obstacle manually.



- ⦿ The return to home feature can be used only for outdoor GPS positioning.
- ⦿ You can tap the "Stop" button to stop for other operations in the way to return.

## FCC Statement

*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 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.*

*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.*

*Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.*

*This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be*

*installed and operated with minimum distance 20cm between the radiator & your body.*

**In need of maintenance service, please contact your dealer,  
or contact HIGHGREAT customer service in the following  
ways:**

**E-mail: [service@hg-fly.com](mailto:service@hg-fly.com)**

**TEL: 400-888-9686**

**Wechat: HighGreat-service**

