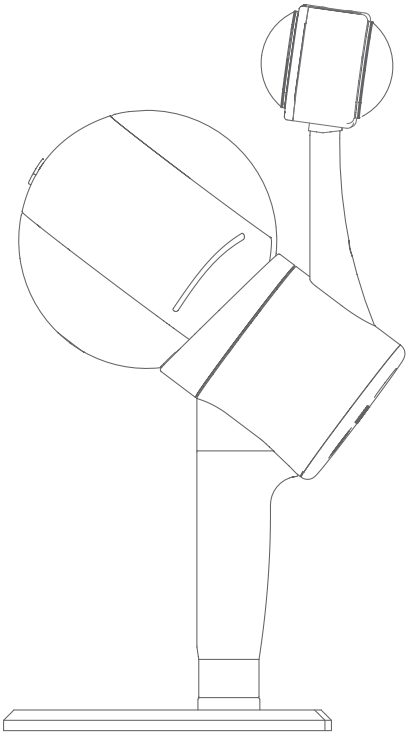


# LiGrip H300

Rotating Handheld SLAM LiDAR System

Quick Start Manual



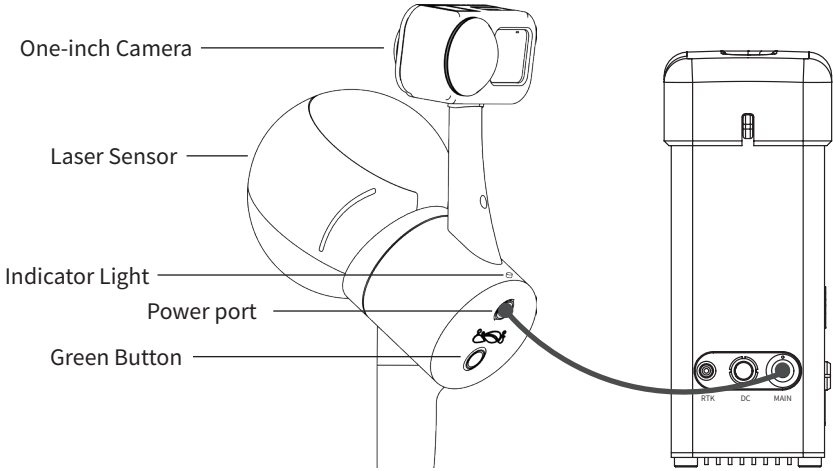


# Contents

LiGrip Assembly	1
Power on the battery box and start the device	1
Turn on the camera	1
Control Mode	2
GreenValley APP Based (Recommend)	2
1. Register, login, active and bind to the device	2
2. Start Collection	2
3. Path Planning	3
4. Ground Control Points Collection	4
5. Stop Collection	4
Button-based	5
1. Initialization	5
2. Data Collection	5
3. GCP Collection	5
4. Stop Collection	6
Data Transfer	7
Project document details	7
Copy based on APP	7
Cable based	8
Camera file transfer	9
Power down the device	10
LiFuser-BP software data processing	10

## LiGrip Assembly

Insert the battery into the battery box, connect one end of the power cable to the handheld and the other end to the MAIN port of the battery box (red dot to red dot); connect the strap and remove the protective cover.

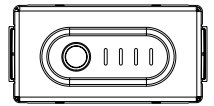


The device can be powered on only after the power cable is connected. Do not hot swap.

## Power on the battery box and start the device

The battery is powered on after a short press of 1s and a long press of 2s. The battery indicator is always on (indicating that the battery is working), and the device system is powered on at this time.

The H300 starts up after the battery box is powered on. The green button on the host quickly blinks to steady on, and the indicator changes from blinking to steady on. The whole process takes about 30 seconds.



## Turn on the camera

Short press the black button on the top of the camera (the camera will make a voice), the camera screen is always on after the camera is turned on, the camera indicator light turns light blue, and the camera will automatically take pictures after the device starts collecting.



Black Button: Power

Red Button: Record

# Control Mode

It is recommended to place it on the ground or other immovable objects, and the level bubble should be centered as much as possible.

There should be no obstruction between the camera and the battery box, it is recommended to put the battery case in front of the chest, and the two are connected via WIFI.

## GreenValley APP Based (Recommend)

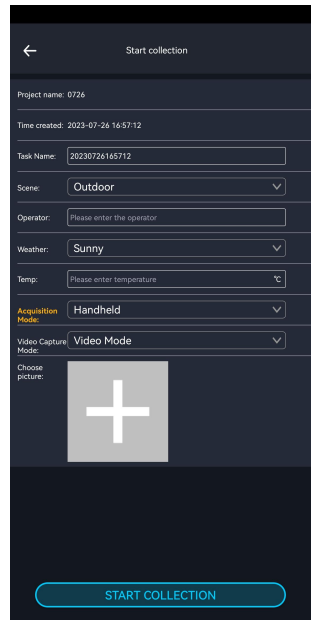
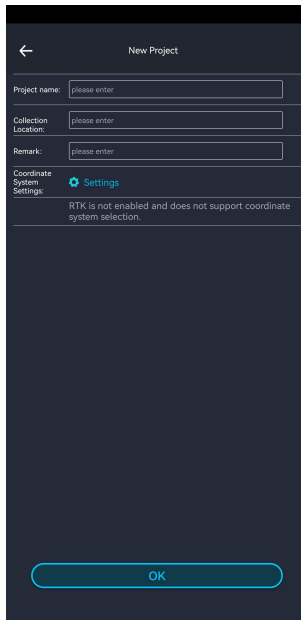
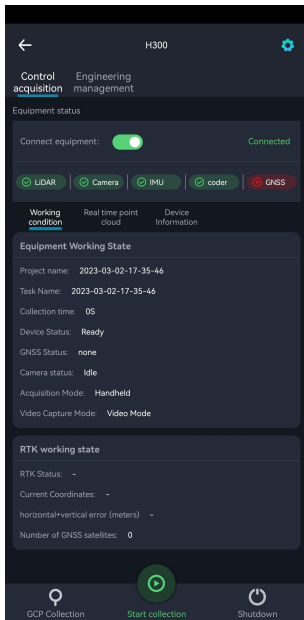
### 1. Register, login, active and bind to the device

Refer to the GreenValley APP user manual

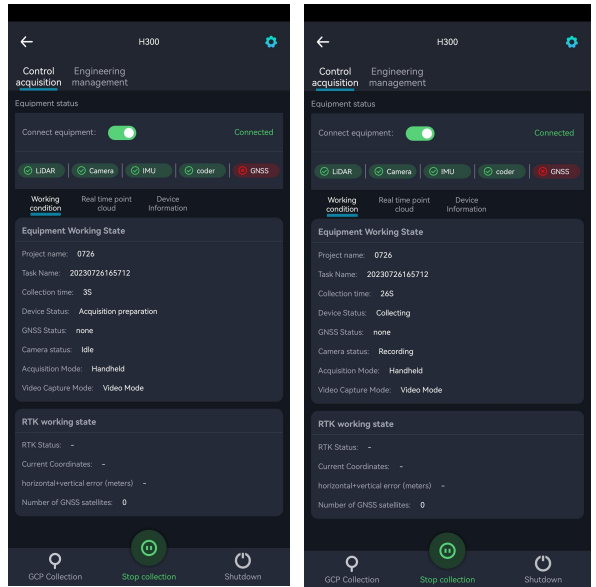
### 2. Start Collection

Choose an open starting position with obvious features, try to keep the level bubble in the center, keep still, and hold it steady with your hands. Connect the APP to the device WiFi, wait for the laser, camera, IMU, and encoder to turn green ✓ (red ✗ indicates that the module is operating abnormally, please check whether the device is turned on normally), and then click the "Start" button at the bottom of the interface.

Click the "Start" button to enter the "New Project" page. The APP supports the establishment of multiple subtasks under one project. After setting the project name, collection location, coordinate system and other information, the coordinate system can be selected according to the actual geographical location; after the new project is set, fill in the actual after the work area information is completed, the subtask project is created, and the equipment starts and enters the initialization state.



Wait for the APP device status to change to "collecting", and when the APP voice prompts "device is collecting", start data collection according to the planned path.

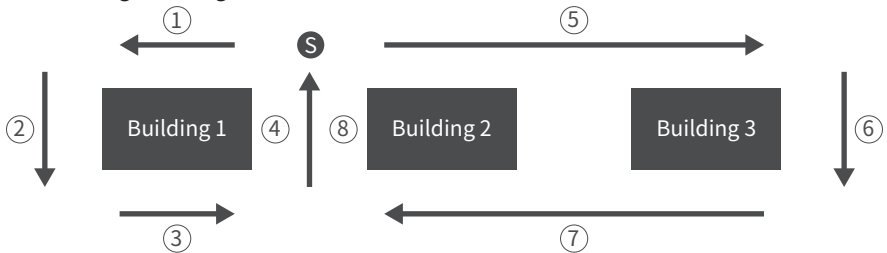


### 3. Path Planning

When the APP voice announces that the device status is collection (or check the device status in the APP working status bar), slowly pick up the device and walk according to the planned route. Do not make large movements of the arms during walking, and the speed should be  $\leq 1\text{m/s}$ . You can use the APP to view real-time trajectory and point cloud.



1. Please try to take a closed loop when the conditions are well, connecting end to end (5-10 meters of repeated paths); Please lay out control points 50-100 meters away if it is impossible to close the loop.
2. It is suggested that the collection should be carried out when there are fewer moving targets.
3. When scanning indoors, open the door in advance, and do not move the door during scanning.

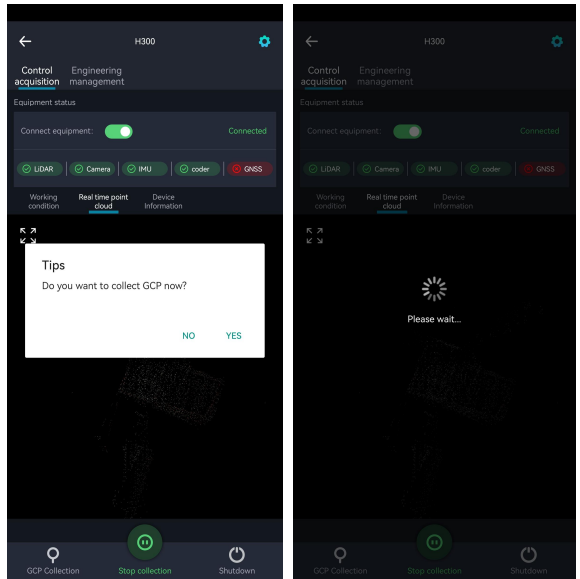


Note: When using modules that can access GNSS signals, such as backpack kits, vehicle kits and airborne kits, it is necessary to keep the equipment walking around the "8" before data collection.



## 4. Ground Control Points Collection

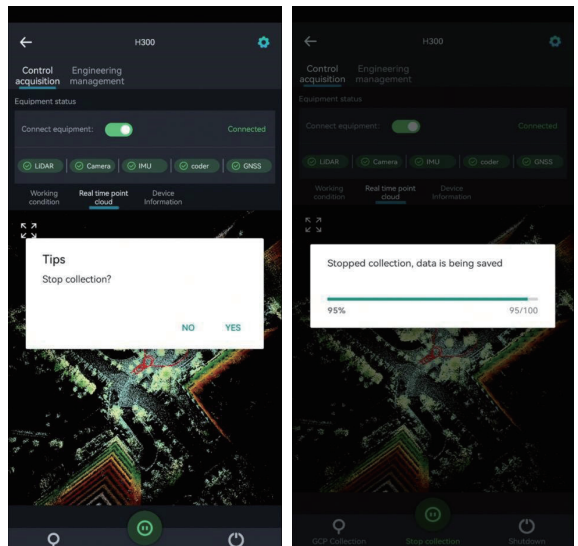
Align the crosswire with the control point, click the "GCP collection" button on the APP, follow the page prompts and voice broadcast to perform the dot operation, and when the status changes to collection again, you can slowly pick up the device to continue the collection.



- Place and pick up the device slowly
- When dotting, press and hold the device and keep the device in place
- No people gather around
- Follow this procedure for other control points

## 5. Stop Collection

- ① . Wrap around 8 in an open area in the same way as button-based step 4.1.3(only wrap 8 is required for backpack/vehicle/ UAV kits).
- ② . Click the "Stop Collection" button of the APP and follow the interface and voice prompts to stop collecting data. When the laser stops turning, manually stop the camera recording. When the progress bar of saving data disappears, APP voice announces "Data saved" and can continue to collect the next project.



# Button-based

## 1. Initialization

Choose a starting position with obvious features, try to keep the level bubble in the center, still, and hold it steady with your hand.

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1. Long press the host button to flash and then let go.
  2. The indicator light flashes quickly, and the scanner starts to rotate (initialization state, building a base map).
  3. The camera automatically starts recording (the camera indicator light changes from light blue to red)
  4. After the indicator flashes from fast to slow, the device is initialized.
- 

## 2. Data Collection

When the initialization is complete, slowly pick up the device and walk according to the planned route. Do not make large movements of the arms during walking, and the speed should be  $\leq 1\text{m/s}$ .

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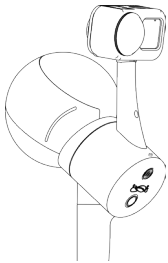


Please refer to the page 3, for 3. path planning.

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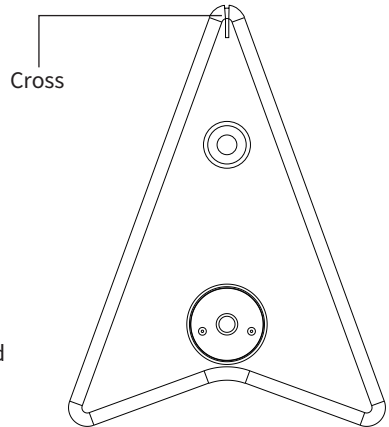
## 3. Collecting Control Points

Align the "cross" hole of the dot base with the control point and stabilize the device. Short press the host button, wait for a few seconds, and the light will change from slow flashing to fast flashing to fast flashing for one time. After the dotting is completed, the absolute coordinates are measured by the surveyor.



Finished

Slow Flash      Fast Flash      Slow Flash



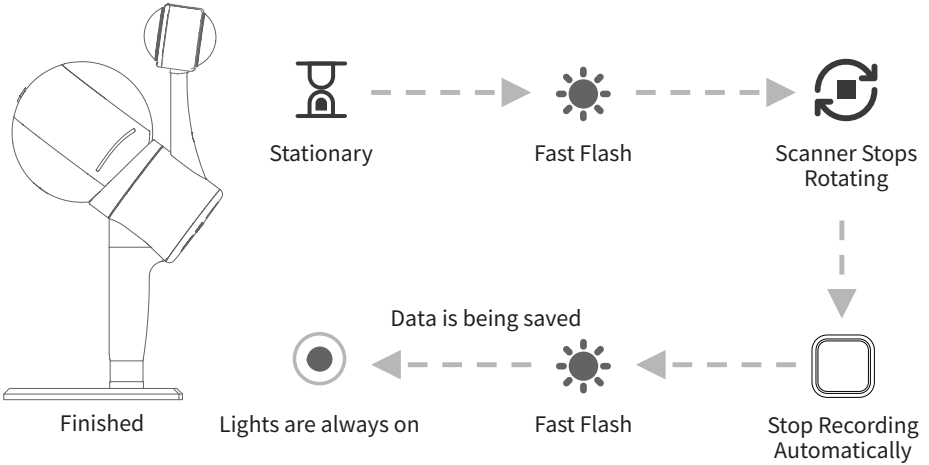
Please refer to the page 4, 4.Ground Control Points Collection.

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#### 4. Stop Collection

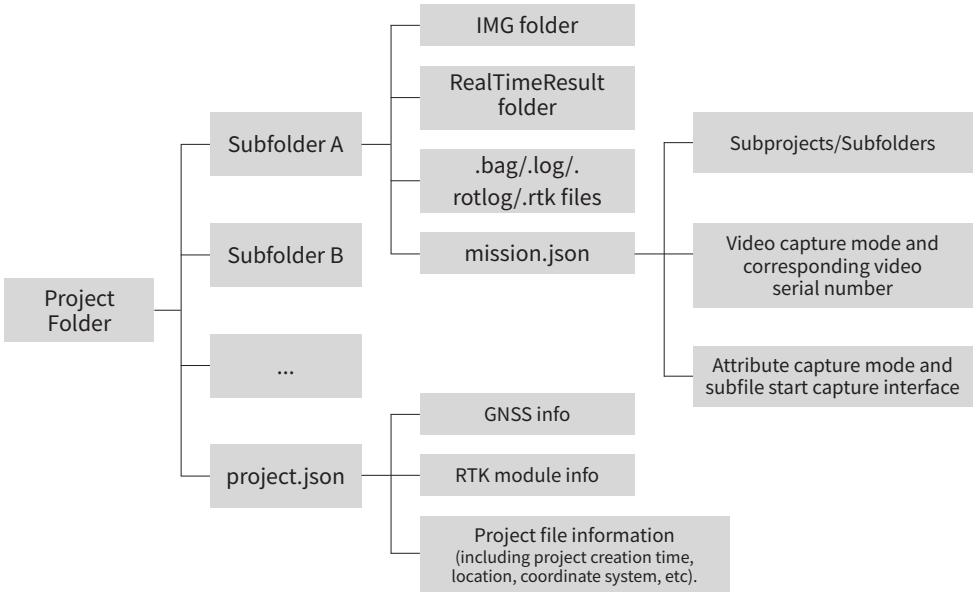
After data collection is completed, keep the device stationary, long press the green button until it flashes quickly and then let go. Then the laser stops rotating and the camera automatically stops recording. The green button will continue to flash quickly. Data is being saved. After the quick flash is complete, data is saved. To continue collection, start directly from 4.2.1 initialization.



# Data Transfer

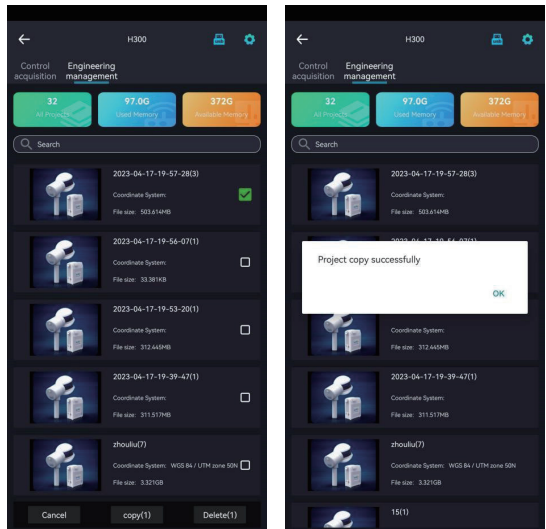
## Project document details

The project folder contains multiple collected subfolders, as well as the project.json file. The subfolders include the IMG folder, RealTimeResult folder, .bag/.log/.rotlog/.rtk and other files, and mission.json files (recording project information of sub-files).



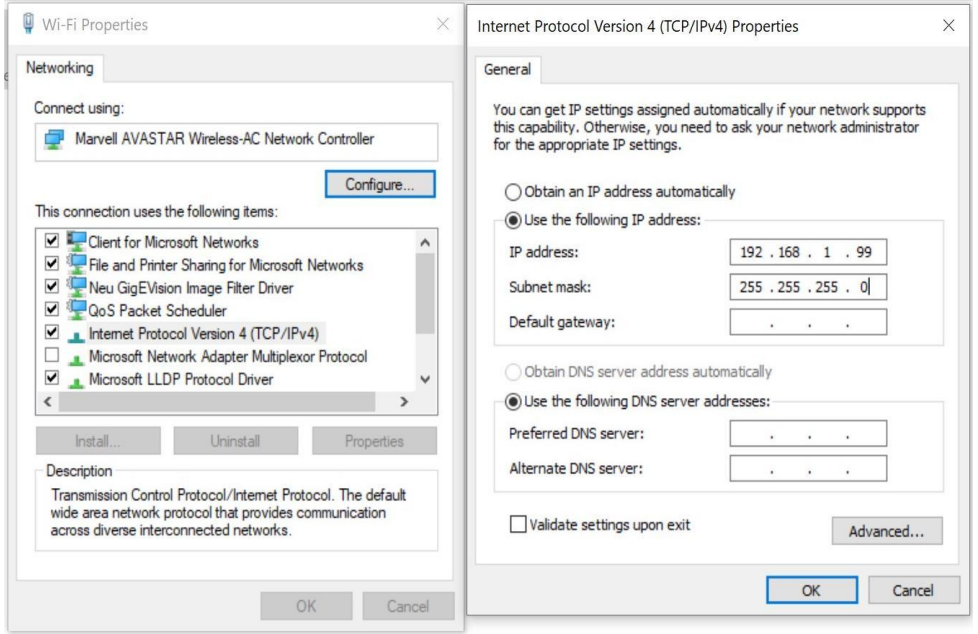
## Copy based on APP

Insert the U disk into the USB port of the device, and use the APP to copy the corresponding project (the project includes bag, log, rtk and other files).



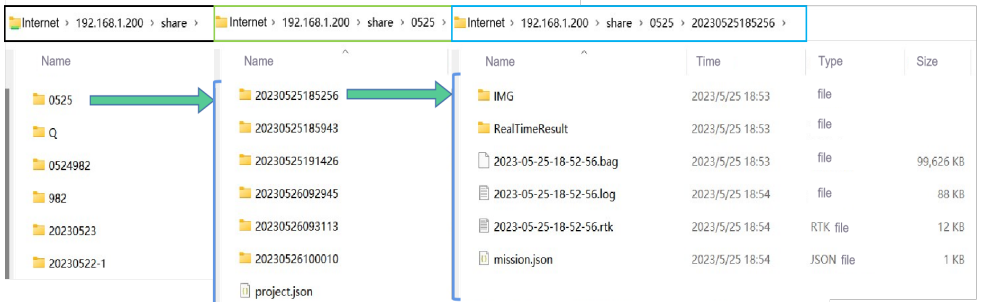
## Cable based

Insert the B58 battery into the battery box to power on, connect the LEMO port of the data transmission cable to the LAN port on the front of the battery box, and connect the network port to the computer.



 IP address: 192.168.1.99      Subnet mask: 255.255.255.0

Enter the URL "\\192.168.1.200" on the computer network to enter the internal storage space of the device, open the "share" folder, copy the corresponding project/subproject file to the computer, and complete the data export.



## Camera file transfer

Use the USB-TypeC data cable, connect one end to the USB port of the computer, and one end to the TypcC port of the camera, and copy the corresponding video files.

U (F:) > DCIM > Camera01

Name	Time	Type	Size
VID_20230502_175612_00_001.mp4	2023/5/2 17:57	MP4 file	679,480 KB
VID_20230502_175612_10_001.mp4	2023/5/2 17:57	MP4 file	675,840 KB
VID_20230502_175822_00_002.mp4	2023/5/2 18:04	MP4 file	2,712,590...
VID_20230502_175822_10_002.mp4	2023/5/2 18:04	MP4 file	2,703,360...
VID_20230502_180912_00_003.mp4	2023/5/2 18:24	MP4 file	6,943,308...
VID_20230502_180912_10_003.mp4	2023/5/2 18:24	MP4 file	6,922,240...



Note: The mission.json file in the sub-project folder records the video file name corresponding to the project!

As shown below, just copy the two video files starting with VID.

```
*mission.json - Notepad
File Edit Format View Help
{
  "mission_name": "20230524110254",
  "project_name": "0524982",
  "mission_properties": {
    "collect_temp": "15",
    "collect_weather": "sunshine",
    "video_url": [
      "/VID_20230502_180912_00_003.mp4",
      "/VID_20230502_180912_10_003.mp4"
    ],
    "collect_environment": "outdoor",
    "collect_person": "null",
    "camera_mode": "video",
    "collect_address": "null",
    "collect_timezone": "Asia/Shanghai",
    "collect_picture": "",
    "collect_time": "2023-05-24-11-02-54",
    "collect_mode": "Handheld"
  }
}
```

## Power down the device

Turn off the device by APP, then press and hold the battery button to turn off the power.

## LiFuser-BP software data processing

The data calculation is the same as that of the backpack.



For LiGrip H300 data calculation, please refer to **the LiGrip H300 User Manual**.

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If you have any questions or suggestions about the manual, please contact us through the following methods:

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