

LiteSurvey GPS

Operating Manual

Model LSG-5840



Caution:

- 1. This device needs to be used on a smartphone or tablet with a supported app installed.**
- 2. The smartphone or tablet used needs to have network function for this device to achieve high positioning accuracy.**
- 3. This device needs to receive satellite signals, and thus should not be used indoors or in areas with poor satellite coverage.**
- 4. Please do not wrap the GPS antenna of this device with metallic substances (e.g., aluminum foil).**
- 5. Please note that strong electromagnetic fields (e.g. near power transformers, substations, etc.) will degrade the positioning accuracy of the device.**
- 6. Access to a GNSS differential correction service (e.g., via an NTRIP account) is required to use the RTK technology.**
- 7. Any accuracy estimates appearing in this manual or the official apps are for reference only. Accuracy figures are neither guaranteed or contractual.**
- 8. The device must be used in accordance with the operating manual in order to obtain a highly accurate position solution.**

FCC Warning

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.

NOTE 1: 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.**

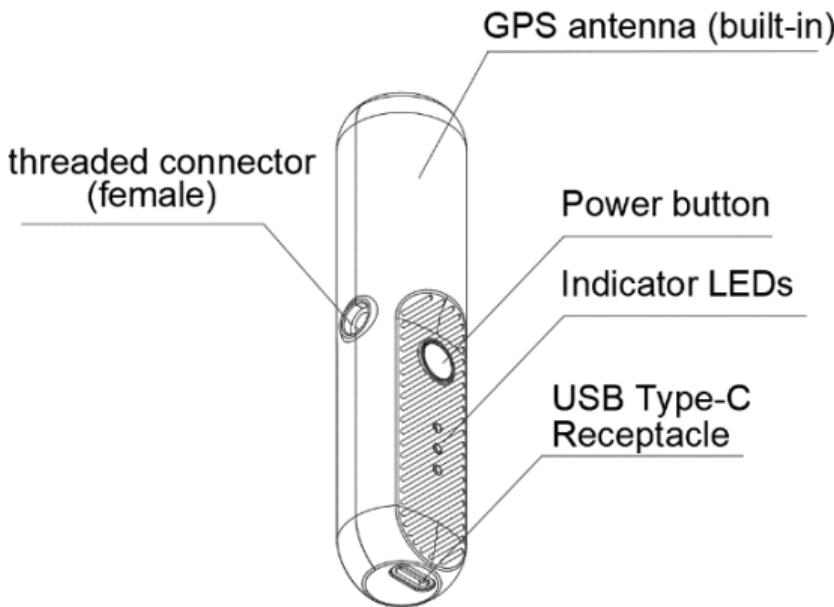
NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

Packing List

1. Operating manual
2. Certificate of conformity
3. Warranty card
4. LiteSurvey GPS
5. Magnetic holder
6. Magnetic disk
7. USB Type-A to Type-C Cable
8. Lanyard

Device Description



The built-in 1/4" threaded connector (female) is used to mount the magnetic holder.

Power on/off

In the Off state, press the power button for 0.5 seconds to power on;

In the On state, press the power button for three seconds to power off;

If the device is malfunctioning, press the power button for five seconds to force power-down.

USB. Type-C receptacle. Used for charging (5V). USB data transfer is supported on PC and Android, but not iOS.

GPS Antenna. The built-in GPS antenna should point straight up while the device is in use. Tilting the device too much or blocking antenna reception (e.g., by holding the device too close to body) will degrade positioning performance.

Auto shut-off. To conserve battery, the device will automatically power down if it has not established a valid data connection to a smartphone, tablet, or PC for five minutes.

Indicator lights

From top to bottom are the satellite signal light, connection status light, and power display light.

Top LED - GPS signal/accuracy indicator

Located nearest to power button.

Blinking Logic

- Fast blinking, twice per second: RTK Single solution (lowest accuracy);
- Slow blinking, once every two seconds: RTK Float solution (medium accuracy);
- Steady On: RTK fixed solution (highest accuracy).

Color Logic

- Orange: data transmitted using Woncan proprietary protocol (larger data throughput);
- Green: data transmitted with NMEA-0183 universal protocol (better compatibility with third-party apps)

Middle LED - Connection indicator

- Blinking blue: USB data not connected, awaiting Bluetooth connection;
- Steady on (blue): Bluetooth connected;
- Steady on (orange): USB data connected.

Bottom LED - Battery/Charging indicator

Located nearest to USB Type-C receptacle.

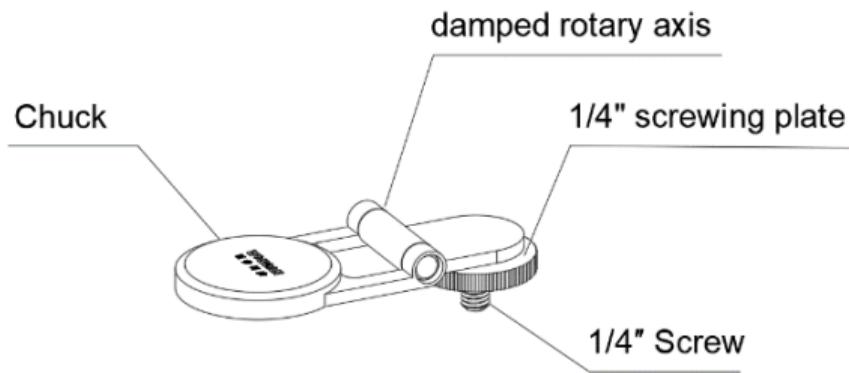
While charging:

- Steady on: Charging;
- Off: Battery fully charged.

While in use and not charging:

- Blinking: Low power.

Magnetic Holder



Chuck: Built-in strong magnet.

Damped rotary axis: For adjusting the angle of the unit after assembly is complete. Ensure that the antenna always faces upwards while device is in use.

1/4" screwing plate: For tightening against the device so it does not come loose.

1/4" screw: For screwing into the corresponding screw hole on the device.

Official Apps

We offer official Android and iOS Apps.

The **Android** App can be downloaded by scanning the QR code below and opening the link with your browser:



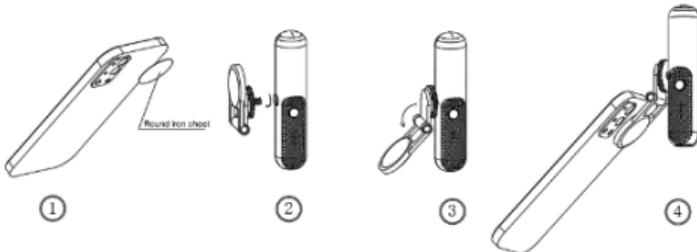
The **iOS App** can be found by searching for "Lite-Survey" in the App Store. As this device is MFi-certified, the GPS data of this product will, after successful connection, replace the iOS system GPS data. With Lite-Survey running in the background, you can perform any GPS-related workload in your favorite app while enjoying the benefits of a more accurate GPS location.

The following iOS devices are tested to be compatible with LiteSurvey GPS.

iPhone model name	iPad model name
iPhone 14 Pro Max	iPad (10th generation)
iPhone 14 Pro	iPad mini (6th generation)
iPhone 14 Plus	iPad (10th generation)
iPhone 14	iPad (9th generation)
iPhone 13 Pro Max	iPad (8th generation)
iPhone 13 Pro	iPad (7th generation)
iPhone 13	
iPhone 13 mini	
iPhone 12 Pro Max	
iPhone 12 Pro	
iPhone 12	
iPhone 12 mini	
iPhone SE (2nd generation)	
iPhone 11 Pro Max	
iPhone 11 Pro	
iPhone 11	

Quick start guide

Connection with smartphone is used as example.



1. Tear off the protective film on the magnetic disk to reveal the adhesive. You can attach it to

- (1) Back side of your phone (less preferred, as adhesive may leave a residue on your phone);
- (2) Inside of your phone case (preferred).

In any case, Woncan is not responsible for damages to your phone.

2. Assemble magnetic holder and device together using the 1/4" screw.

3. Unfold the magnetic holder and attach it to the back of your phone via magnetic suction.

4. Tighten the device using the 1/4" screwing plate on the magnetic holder.

5. Rotate magnetic holder around the damped axis, as necessary, to ensure that the antenna points straight up.
6. Install one of the **Official Apps** and open it. Turn on the device and connect to the Apps.

When the Connection indicator LED is steady blue, the wireless connection is successful.

Android

Go to [My] - [GNSS Data Source] - [Bluetooth] - [Scan] and scan for devices. Select your device in the list and click [Connect]. A pairing request may appear; accept it to continue.

iOS

Go to [My] - [GNSS Data Source] - [MFi]. A "Select accessory" window will appear; select the device from the list.

7. Use the device in an outdoors environment with open sky.
8. To check the status of the device, click on the blue status bar at the top of the home page.

For additional instructions for the app, please see the help document inside the app.

Equipment parameters

Device Model	LSG-5840
GNSS Signals Supported	
GPS	L1, L5
Beidou	B1I, B2a
GLONASS	G1
GALILEO	E1, E5a
QZSS	L1, L5
GNSS Technology	
RTK	Supported
Time To First Fix	
Warm Start	5 seconds
Cold Start	30 seconds
Positioning Accuracy (For reference only)	
RTK Fixed	Horizontal: 1.0 cm + 1 ppm Vertical: 2.0 cm + 1 ppm
RTK Float / DGNSS	Horizontal: 0.5 m

Single	Horizontal: 2.5m
Type	Internal Quadrifilar Helix Antenna
Bands	L1 + L5 band
Physical I/O	
Button	1 × Power button
LEDs	3 (Satellite, connection, battery)
USB	Type-C Receptacle
Physical Properties	
Height	116 mm
Length / Width	25 mm diameter
Weight	41g
Material	PC+ABS
Operating temperature	-25°C ~ +60°C
Water/Dust Resistance	IP53
Battery / Charging	
Battery Capacity	1000 mAh
Charging Current	5 V / 1 A

Battery Life		> 8 Hours
Charging Time		1.5 Hours
Connectivity		
Wired		USB COM Port
Wireless		Bluetooth Classic (with MFi support)
Data Formats		
Input		RTCM 2.3/3.0 (Default), Woncan Proprietary Protocol
Output		NMEA 0183 Version 4.0 (Default), RTCM 3.0, Woncan Proprietary Protocol
App Support		
Official App		Lite-Survey (Android and iOS, available in Chinese and English)
Third-party App Integration		Android and iOS SDKs available

Use of the Made for Apple badge means that an accessory has been designed to connect specifically to the Apple product(s) identified in the badge and has been certified by the developer to meet Apple performance standards. Apple is not responsible for the operation of this device or its compliance with safety and regulatory standards.

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