DG-500 GPS Data Logger
Quick Start Guide

Version: 0.9

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Chapter 1：Function and Specifications

## 1-1 Functions and features

- Data logger for recording the traveled path data

- Compact and portable

- Support USB Mass storage

- Support Micro memory card up to 32G, points (with location/ time/ date/speed)

- Built-in high efficiency Li-Ion battery

- Press to save the current point, you could save the points anywhere

- Micro USB port for charging

- GPS fix status shown by LED

- Battery power low shown by LED

- Charging shown by LED

- Memory status shown by LED

- Water-resistance IPX4

- Built-in Blue tooth for BT GPS Receiver function

1-2 Specifications

Electronics	
GPS Chipset	High Performance GPS chipset
Frequency	L1, 1575.42 MHz
C/A Code	1.023 MHz chip rate
GPS Accuracy	
Position Horizontal	Autonomous<2.5M
Velocity	0.1m/sec
Time	1 micro-second synchronized to GPS time
Datum	
Datum	Default: WGS-84
Acquisition Rate	
Hot start	1 sec., average
Warm start	35 sec., average
Cold start	35 sec., average
Reacquisition	0.1 sec. average
Protocol	
GPS Protocol	Default: NMEA 0183
GPS Output format	GGA,GSA,GSV,RMC,GLL,VTG
Dynamic Condition	
Acceleration Limit	Less than 4g
Altitude Limit	18,000 meters (60,000 feet) max.
Velocity Limit	515 meters/sec. (1,000 knots) max.
Battery	
Battery Cell Type	Built-in Li-Ion rechargeable Battery
Battery Capacity	820mAh
Charging time	4 hours (Battery Capacity 0% to 100%, Charge Current 250mA)
Operation time	TBD
Antenna	
GPS Antenna Type	Built-in ceramic 18*18*4 patch antenna
Buttons	
Power Key	Turn on & Turn off the device
Main Button	Press button once to save a waypoint Hold on button for 3 seconds to turn on/off Bluetooth Receiver
Reset Key	Reset device
Temperature	
Operating	-20°C ~ 50°C
Charging	0°C ~ 40°C

Humidity	Operational up to 95% non-condensing
Mechanism	
Size	79mm* 42mm* 19mm
Weight	58g

1-3 Accessories

DG-500 Main Unit	**USB Cable**	**Micro SD Card**

1-4 Appearance
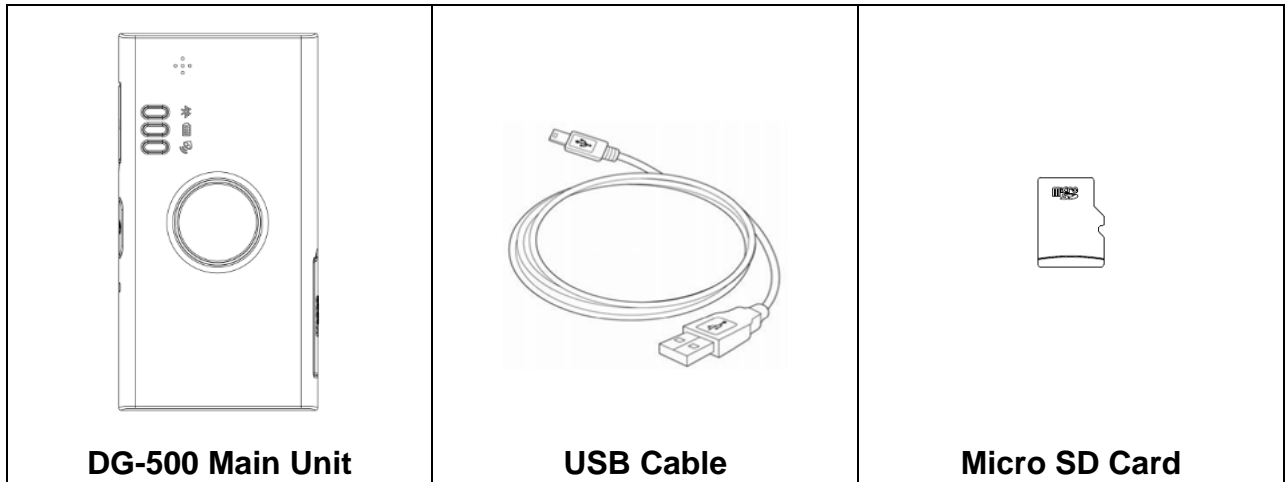
Left Side   Front Side   Right Side
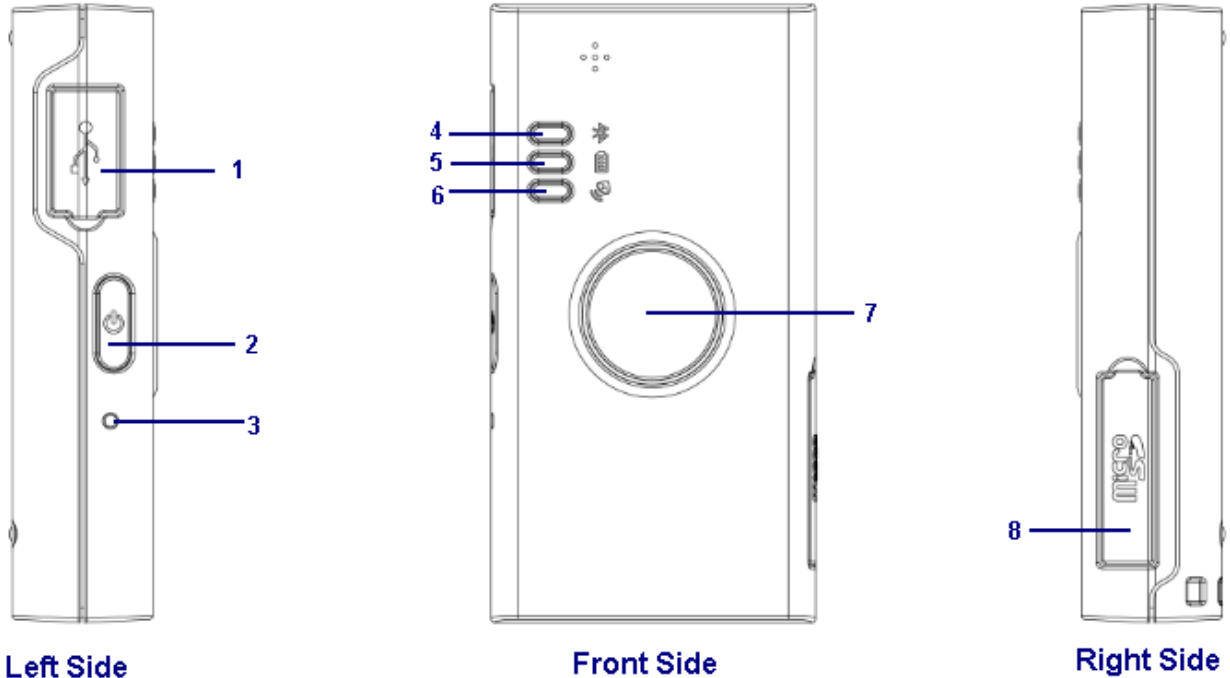
1   **Micro USB port**

2   **Power Key**

3   **Reset key**

4	**Bluetooth & Memory LED**
5	**Power LED**
6	**GPS LED**
7	**Main Button**
8	**Micro SD Card Slot**

1-5 LED Indicator Chart

BLE &Memory LED

LED	Red (On)	Red Blink Quickly (Once per second)	Blue Blink Slowly (Once every 3 seconds)	Blue Blink Quickly (Once per second)
State	Memory card is not installed	Memory is full	Bluetooth is on, but not connected to the other Bluetooth	Bluetooth is connected to the other Bluetooth

Power LED

LED	Orange	Red
State	DG-500 is being charged	Battery power is low

GPS LED

LED	Blink Quickly (Once per second)	On
State	DG-500 gets GPS fix	DG-500 does not get GPS fix

Chapter 2：Start to Use

2-1 DG-500 Operation

1. Initially, the enclosed rechargeable battery requires a complete charge before device usage. Therefore, to maximize your device's battery life it is highly recommended to connect DG-500 to AC charger for 4 hour battery charge time (DG-500 in power-off condition.)
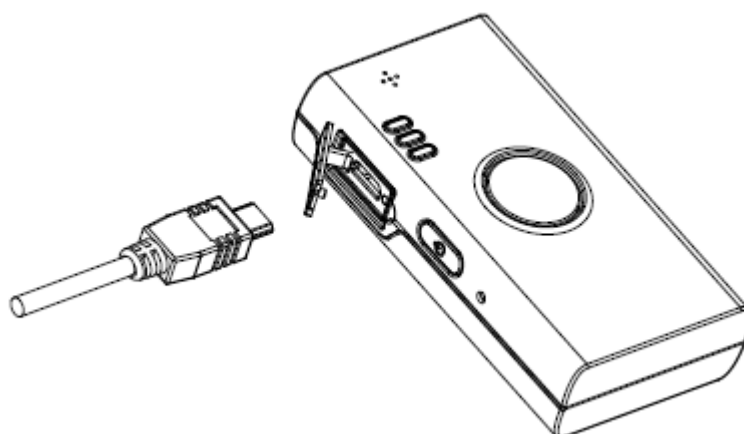
2. Install the Micro SD Card into the Micro SD Card Slot with the metal side facedown. Press and hold the power button for three seconds to turn on DG-500. Then you would see GPS LED on.
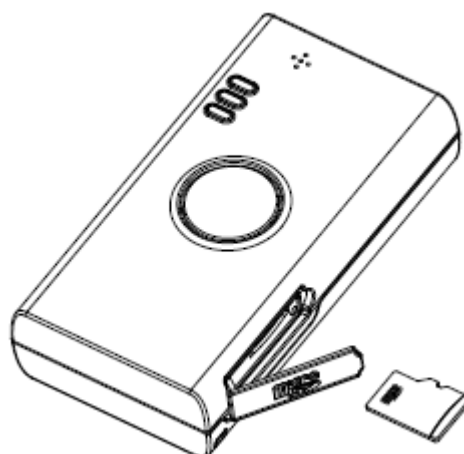
3. After getting GPS fix and starting to record traveled path, GPS LED would flash.

2-2 DG-500 Power Off

Under power-on status, press and hold power button for three seconds to turn off device. GPS LED would be off after device is powered off.

2-3 DG-500 Bluetooth ON

Under power-on status, press and hold Main button for three seconds to turn on the Bluetooth. The Bluetooth LED would blink blue slowly. After DG-500 pairs with the other Bluetooth, the Bluetooth LED would blink blue quickly. GPS Data could be sent out via Bluetooth.

2-4 Save the Waypoint

When DG-500 could get GPS fix, you could short press main button to save the waypoint to Micro SD Card. The memory LED would blink red once. (You could not save waypoint if it could not get GPS fix.)

Chapter 3: DG-500 PC Utility Operation

3-1 PC Utility Function

Uploading the recorded data	Upload the traveled path data into PC and save it
Saving data into different format	(1) KML format for Google Earth (2) GPX format file (3) CSV format file (4) GSR format file
Data logging Setting	Power Saving Mode Bluetooth Status Height Limit
Setting the recording interval	Range:1~5 second

3-2 Main Screen Introduction

Start to connect

1. Connect DG-500 and PC by USB cable.
2. Double click the icon or select **[Start]→[All Programs]→[Globalsat DG-500 Tool]→ Globalsat DG-500 Tool**

You would see the main screen of DG-500 PC Utility as the screenshot below.
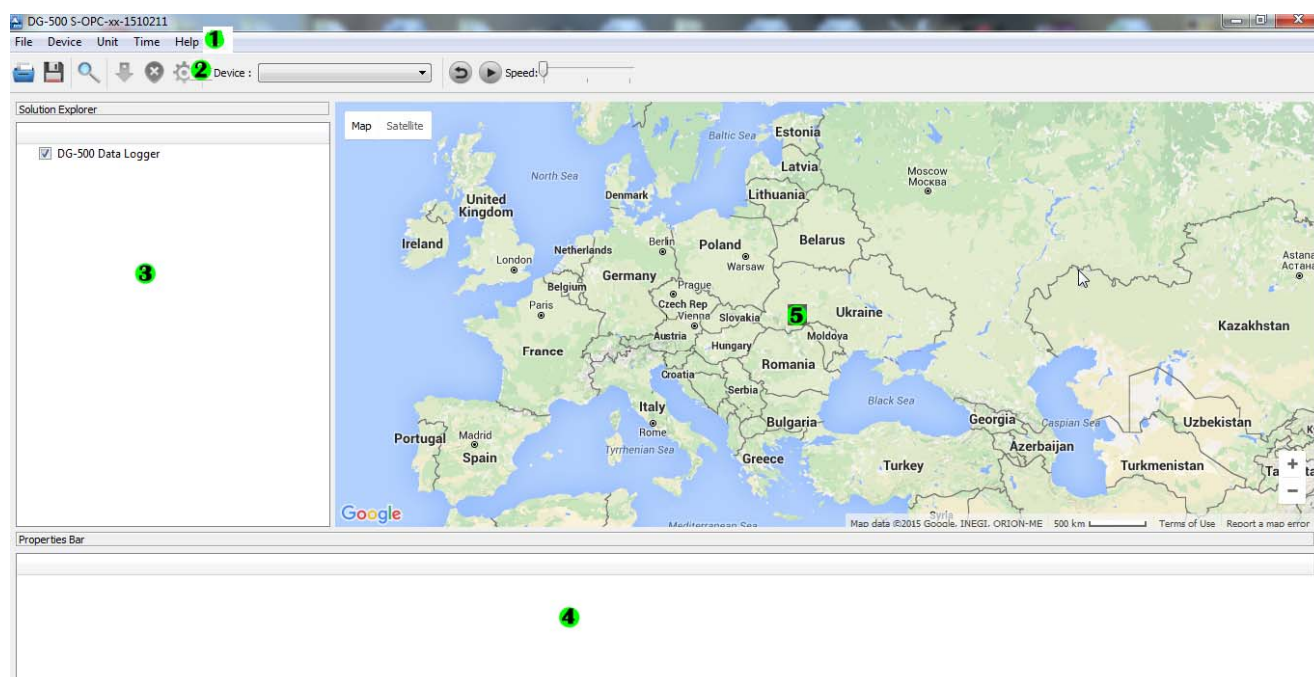
❶Menu bar

❷Tool bar：

   Open the file in the PC   Save data to PC

   Filter function   Upload DG-500 traveled data

   Delete all data in DG-500   Set DG-500 function

   Play Log file   PC Utility version

❸Traveled path data list：

List the traveled path data loaded from DG-500 or from file

❹Traveled path information field：

Show the information of traveled data, including date, time, longitude, latitude, speed, and height (according to the DG-500 data setting)

❺Google Map Display:

Show the selected point of the traveled data list on Google Map

3-3 Download and sett the traveled path data

1. Click on   icon

2. Select   the traveled path data that you'd like to download and then click on "Apply" button.
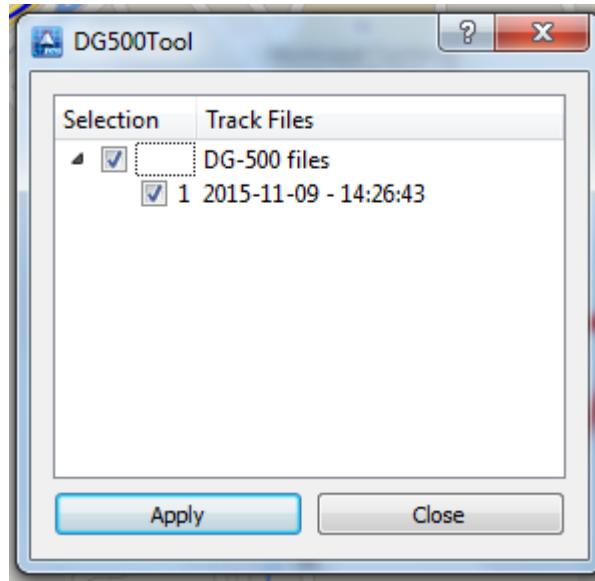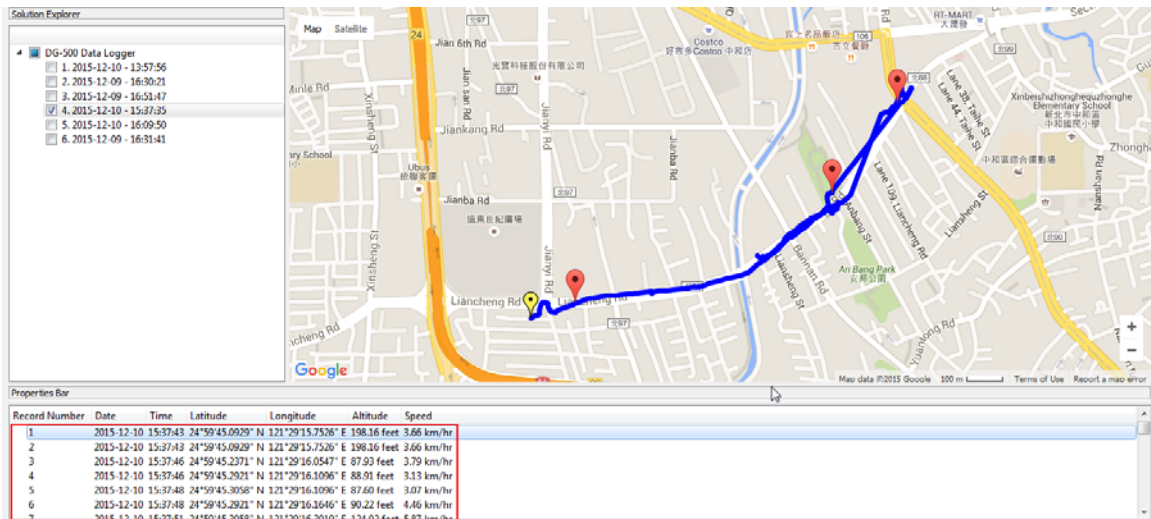
3. The downloaded data would be displayed on the traveled path data list. Each data would be displayed the date and the starting time.
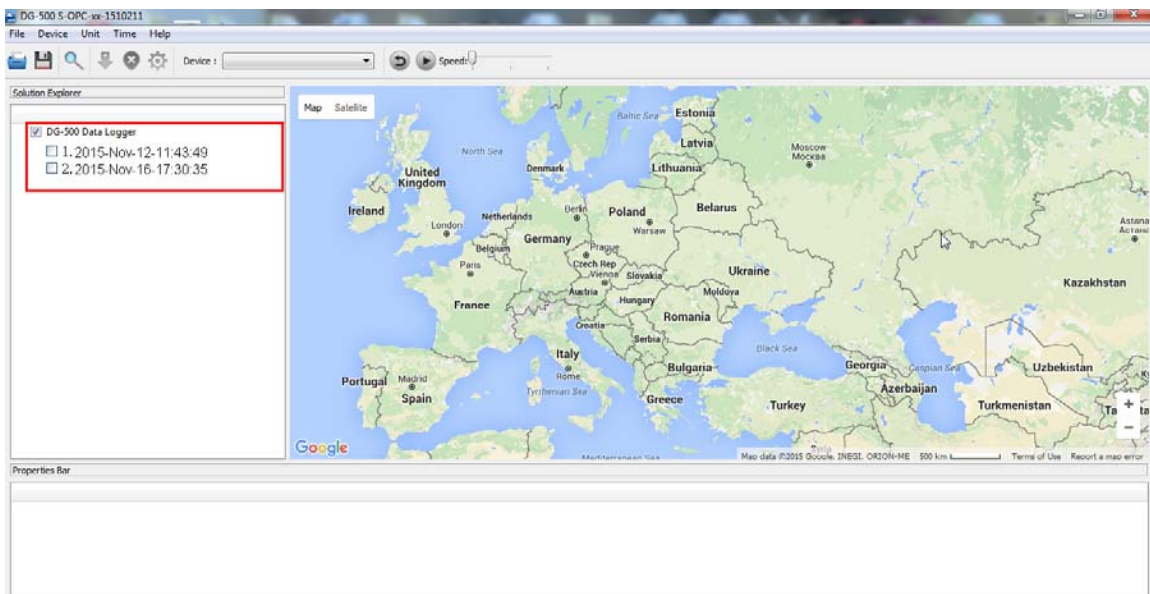
4. You could display the traveled path data on Google Map by selecting ☑ the data in the traveled path list. If you double click the traveled path, Google Map would move to the starting point of that traveled path. The Traveled Path Information field would display all the recorded points. The manually saved waypoints would be marked with 📍
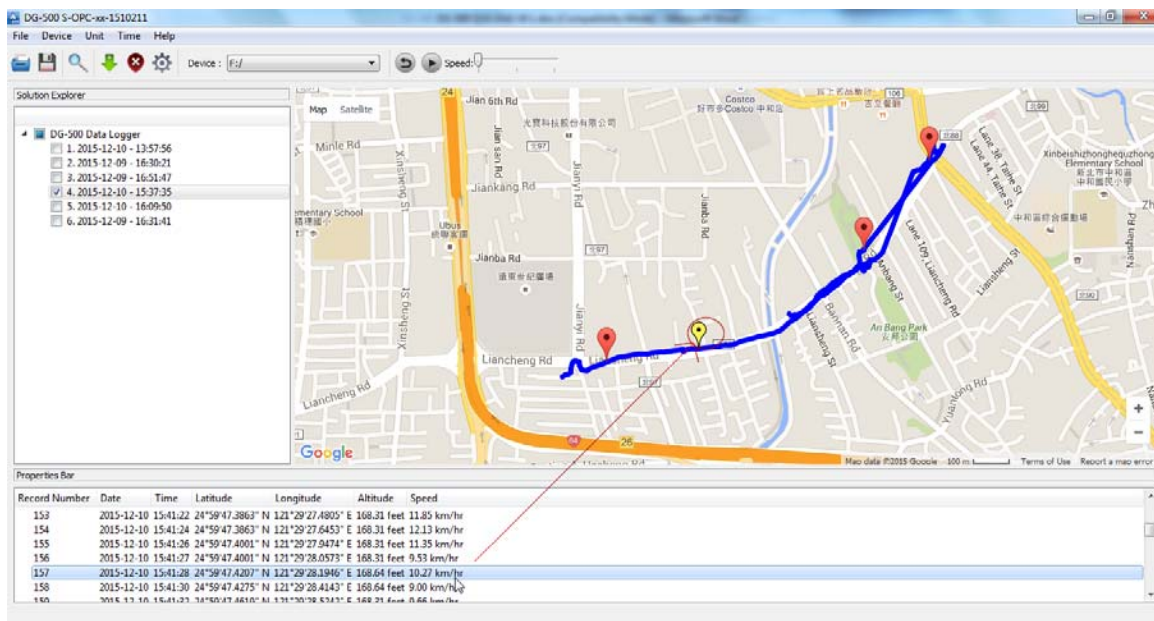

5. You could display any points on Google Map by click on that point in the traveled path information field. That point would be marked 📍 as on Google map. The manually saved waypoints would be displayed on Google map at the same time.

6. You could select several traveled paths to display on Google map. The traveled paths would be marked by different colors.
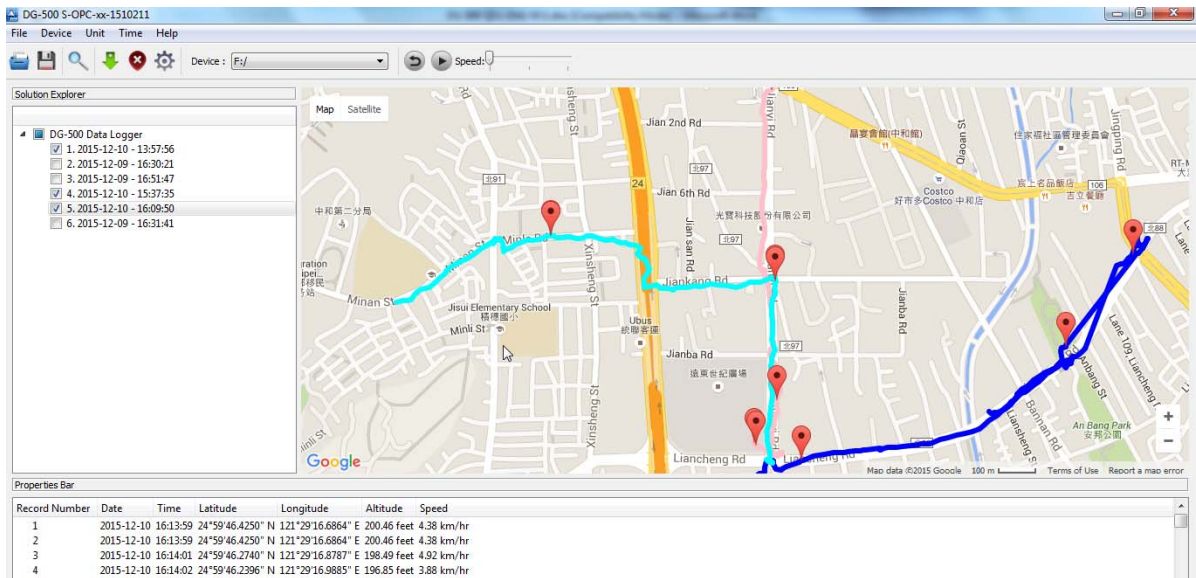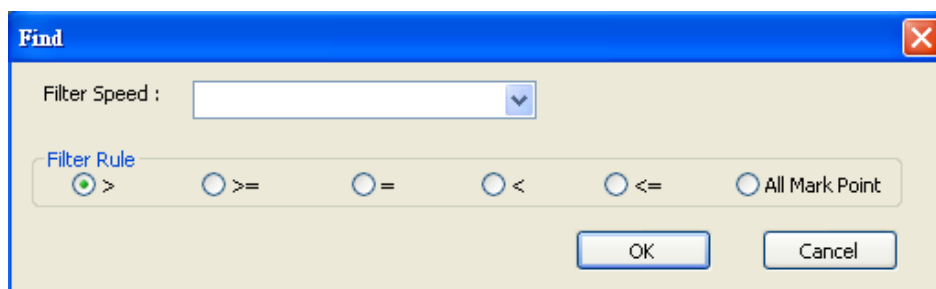

7. You could check the details of each point in the traveled path information field. The manually saved waypoints would be marked with start signs.
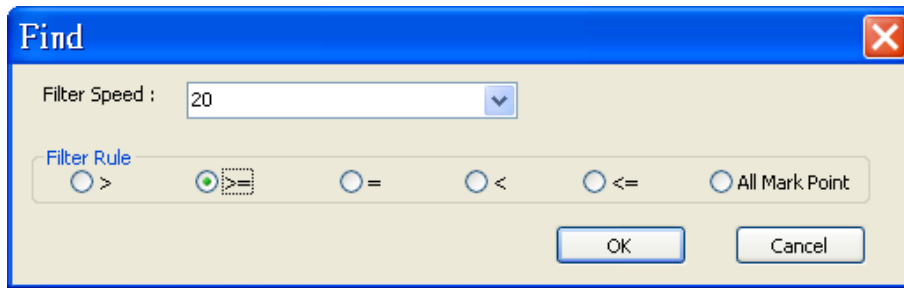

3-4 Filter the Traveled Points by 🔍

1. Click on the 🔍 icon on tool bar.
2. You would see the screenshot as below.

3. Enter the speed you'd like to filter and choose the filter rule. Then you could get the points of your setting. You could view all the manually saved points by select

4. Corresponding data.

Record Number	Date	Time	Latitude	Longitude	Speed
1	2015-12-09	19:17:04	24°59'45.96...	121°29'13.3...	20.1 km/hr
2	2015-12-09	19:17:35	24°59'45.64...	121°29'2.02...	24.0 km/hr
3	2015-12-09	19:18:05	24°59'44.39...	121°28'58.6...	32.8 km/hr
4	2015-12-09	19:20:35	24°59'39.16...	121°28'43.6...	37.0 km/hr
5	2015-12-09	19:21:05	24°59'30.12...	121°28'34.7...	45.4 km/hr
6	2015-12-09	19:21:35	24°59'25.86...	121°28'23.6...	25.6 km/hr
7	2015-12-09	19:23:05	24°59'20.48...	121°28'11.8...	37.7 km/hr
8	2015-12-09	19:23:35	24°59'15.02...	121°28'1.59...	43.1 km/hr
9	2015-12-09	19:25:05	24°58'57.19...	121°27'56.1...	47.3 km/hr

5. Select would display all the manually saved points.

| Record Number	Date	Time	Latitude	Longitude	Altitude	Speed
1*	2015-12-10	16:17:07	25°0'0.7347" N	121°29'17.4554" E	184.38 feet	0.51 km/hr
2*	2015-12-10	16:17:13	25°0'0.8514" N	121°29'17.4554" E	182.74 feet	0.29 km/hr
3*	2015-12-10	16:21:25	25°0'4.4083" N	121°28'57.6526" E	151.90 feet	0.75 km/hr
4*	2015-12-10	16:21:36	25°0'4.3671" N	121°28'57.6526" E	155.18 feet	2.25 km/hr

3-5 Save Data to PC

You could save the traveled path data by clicking on 💾

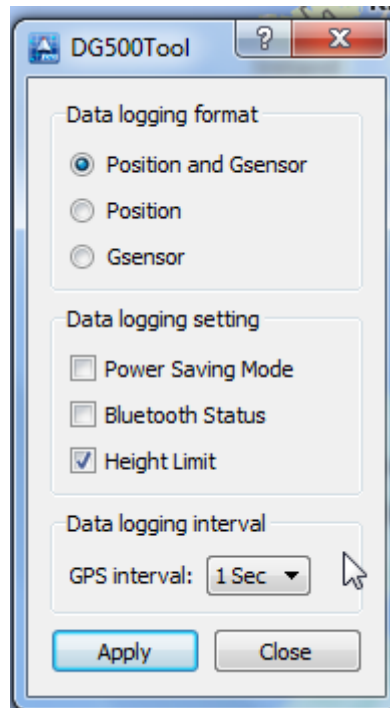You could save the data in the format of *.gsr or *.kml or *gpx or *.csv.
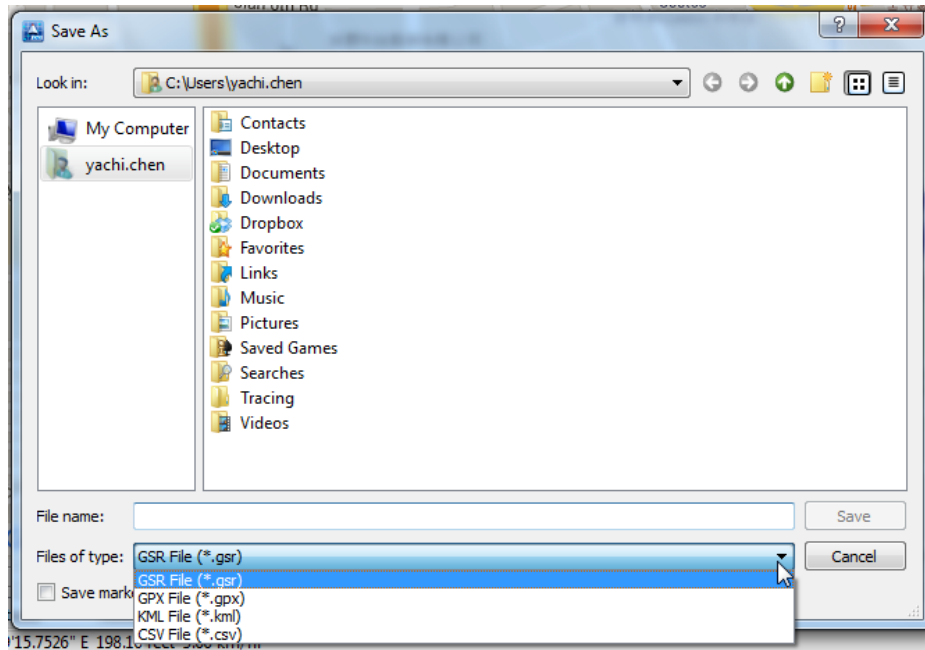
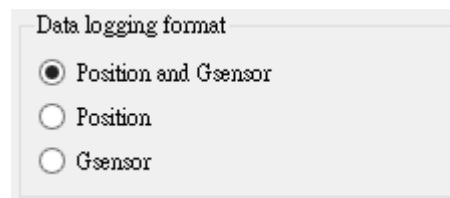You could open the saved traveled path data by clicking on 🖨 icon. You could only open the file of *.gsr format.

.
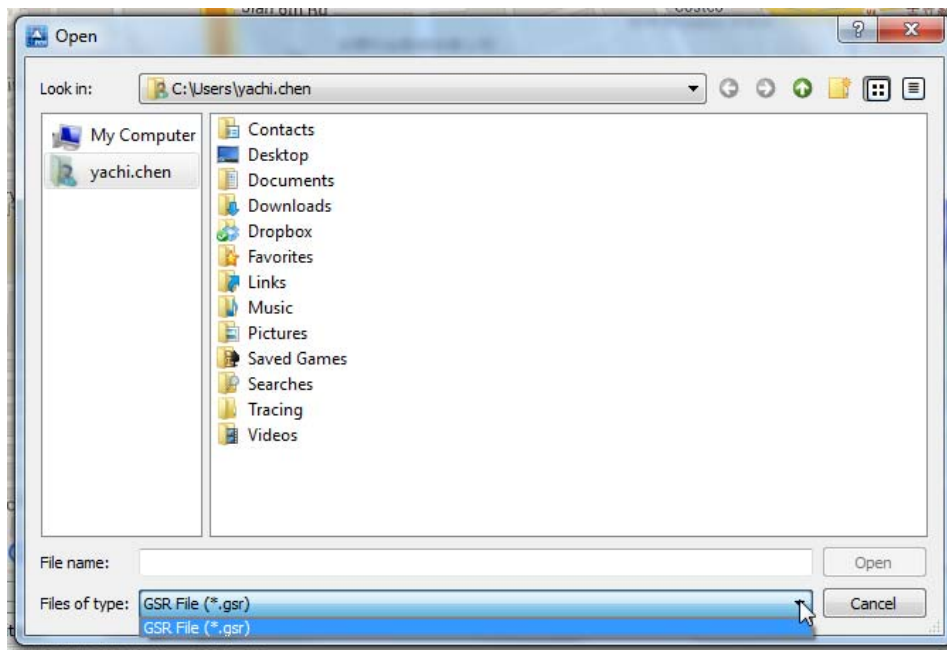
3-6 Set the Save Points format

Click on ⚙ icon on tool bar or select **[Device]** → **[Device Setting]**
You would see the screenshot as below.

Function description:

**Data logging format** (choose the required travelled point's detail for recording)

Position and Gsensor: Record the position and G-force information. Position data would be recorded in the file format of gpl. G-force data would be recorded in the file format of gel.

Position: Only record the position data and save it as the file format of gpl.

Gsensor: Only record the G-force data and save it as the file format of gel.

Data logging setting (choose the device setting)
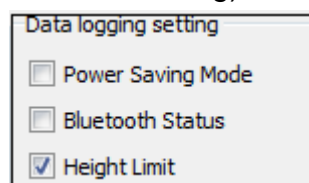
Power Saving Mode (on/off):

Turn on/off power-saving mode. In power-saving mode, device would not record position if it does not detect movement for 5 seconds.
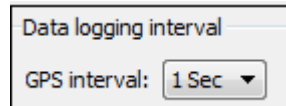
Bluetooth Status on/off:

Turn on/off the Bluetooth.

Height Limit on/off

Turn on/off the limit of height, 18,000 meters.

Data logging interval

Data logging interval

GPS interval: 1 Sec ▼

Select the interval for recording the position at the pull-down menu of "GPS interval."

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 of the device.

FCC RF Radiation Exposure Statement:

1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.