

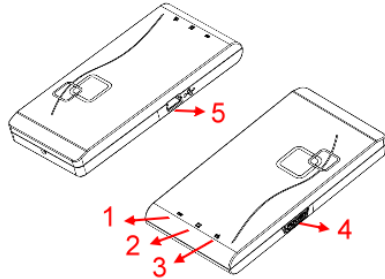
# 821E Users Manual

Thank you for purchasing 821E 66-Channel GPS Datalogger.

## a. Package Content

- 821E x 1
- USB to mini-USB cable x 1
- Rechargeable Li-ion battery x 1
- CD Tool x 1 (Software)

## b. Appearance & Led indications.



1. Battery status LED (Green)(Red)		Green - always ON = Charging
		Green - OFF = Fully charged
		Red - always ON = Low battery
2. GPS LED (Orange)		Always ON = Not Fix and searching for satellite
		OFF = Power saving mode
		Blink every 2 seconds = GPS fix (smart log mode) Blink every 1 second = GPS fix (5Hz log mode)
3. Log/Memory LED (RED)		Always ON = Memory 90% full
		Quick blink 3 times = POI recorded
		Blink every 2 seconds = logging Blink every 5 seconds = power saving mode
4. Power switch / POI button		Push and hold for 4 seconds to turn ON/OFF 821E
		Push and hold for 2 seconds to turn ON/OFF 5Hz
		Push to record POI
5. USB Port		For power supply and data exchange

## c. Major functions

Built-in MTK II GPS	High performance GPS solution with A-GPS for instant fix less than 15 seconds.
Built-in 64Mb memory	Capacity for up to 250,000 waypoints recording.
5Hz update rate	Faster update rate to allow for high speed recording
Rechargeable Battery	750mA Li-ion battery for up to 25 hours operation time and 200 hours standby time.
Built-in motion sensor (This function is turned on as default and can be turned off by the provided software.)	For automatically start/ stop logging and smart power management and waypoint saving. (only work with smart log mode) 821E will enter sleep mode when it is static for 2 minutes and recover when motion is detected.
Built-in Mini USB port	For power charging and data exchange. Use USB cable to connect to power source to charge the battery. Connect to PC to download the logged data or upload the A-GPS EPO data. *Connect to Laptop via USB cable to work as a wired GPS receiver.
Built-in Auto Gear function	Log time interval will be changed according to the speed detected by the Device. Speed for each time interval can be programmed by the provided software.

## d. Product Specification

General	
GPS Chipset	MTK 3329
Frequency	L1, 1575.42MHz
C/A Code	1.023MHz chip rate
Channels	66-CH for tracking
Antenna	Built-in patch antenna with LNA
Datum	WGS-84
Performance Characteristic	
Position	Without aid: 3.0m 2D-RMS
Accuracy	<3m CEP(50%)without SA(horizontal) DGPS(WAAS,EGNOS,MSAS):2.5m
Time	50 ns RMS
Velocity	Without aid:0.1m/s, DGPS(WAAS,EGNOS,MSAS):0.05m/s
Cold/Warm/Hot	35/33/1 sec, average
Dynamic condition	
Altitude	<18,000m
Velocity	<515m/sec
Acceleration	4G



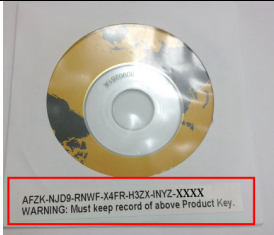

Environmental	
Operating	-10°C to +60°C
Storage	-20°C to +60°C
Charging	0°C to +45°C
Relative Humidity	5% to 90% non-condensing
Power	
Charging time	3hrs (Typical)
Operation Time	25 hours
Protocol	
NMEA-0183 (V3.01) - GGA, GSA, GSV, RMC (default) Data bit: 8, stop bit:1 (Default), Baud rate: 115200	
Log data	
RCR, Date, Time, Fix valid, Latitude, Longitude, Altitude, Speed, Heading	
Physical	
Dimension	93.5 x 46 x 10.8mm
Weight	49g
Others	
Certification	CE / FCC

### e. Setup your 821E


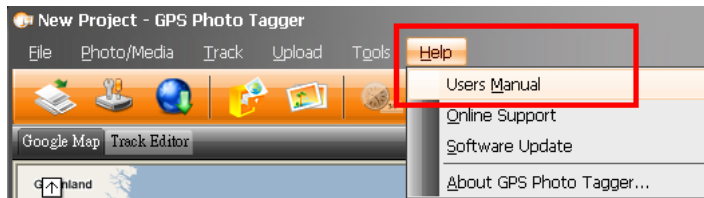
Install the software utility and driver for 821E. (System requirement)

Minimum Configuration	Recommended Configuration
<ul style="list-style-type: none"><li>- Windows XP</li><li>- Pentium 3, 500Mhz</li><li>- 128M RAM</li><li>- 400MB disk space</li><li>- Network speed: 128Kbits/sec</li><li>- 3D-capable video card with 16Mbytes of VRAM</li><li>- 1024x768, "16-bit High Color" screen</li></ul>	<ul style="list-style-type: none"><li>- Windows XP, or Vista</li><li>- Pentium 4 2.4GHz+ or AMD 2400xp+</li><li>- 1G RAM</li><li>- 2 GB of free disk space</li><li>- Network speed: 768 Kbits/sec or better (DSL/Cable)</li><li>- 3D-capable video card with 32 MB of VRAM or greater</li><li>- 1280x1024, "32-bit True Color" screen</li></ul>

### f. How to connect 821E to your PC

<p><b>Step1.</b> Find the software in the CD come with the package.</p> 	<p><b>Step2.</b> Double click on the phototagger in the software utility folder and follow the process to finish the installation.</p> 
<p><b>Step3.</b> User will be required to input the product key of phototagger at first time use. Product key can be found on the envelope of CD come with the package.</p> 	<p><b>Step4.</b> Connect 821E to your computer with USB cable come with package and turn on the power of the device.</p>
<p><b>Step5.</b> Open phototagger and click on the "config GPS" button show in the below circled area to setup the device.</p> 	<p><b>Step6.</b> Remove USB connection after finish the setup and switch on the power again and then you can enjoy recording of your trip.</p>

### g. How to read data from the device.

<p><b>Step1.</b> Connect 821E to your computer with USB cable come with package and turn on the power of the device.</p>	<p><b>Step2.</b> Open phototagger and click on the "Read from device" button show in the below circled area to start downloading data.</p> 
<p><b>Step3.</b> [Note] To display track points on Google Earth, your PC must have Network to access the internet and Google Earth application. Google Earth installation (Download from <a href="http://earth.google.com/">http://earth.google.com/</a>) [Notes and Warning] If you have recorded more than 125,000 waypoints in your 821E, it may take an entire resource of your computer to show all the logged data in Google Earth. Therefore, with not enough RAM capacity the <b>computer may hang up</b> (a system <b>frozen</b>). For detail use of phototagger --- Please refer to Help &gt; User Manual show in the below circled area.</p> 	

## h. Helpful tips

- It's better to turn off 821E when you don't use it, otherwise it might still keep recording data.
- Some vehicles having heavy metallic sun protecting coating on windshields may affect GPS signal receptions.
- Driving in and around high buildings may affect GPS signal receptions.
- Driving in tunnels or indoor park garage may affect signal receptions.
- In general, 821E performs best in open space where it can see clear sky. Also weather will affect GPS reception – rain & snow contribute to worse sensitivity.
- For the 1<sup>st</sup> time you use the 821E, it will take 1 to 3 minutes to obtain the satellite constellation information and fix your position, this is called “Cold Start”.
- If your 821E can't fix your position for more than 20 minutes, we suggest you change to another spot with open space and then try again.

\*Google Earth is a trademark of Google.

[Note] When you use AGPS function, we suggest using GpsView to download the AGPS data via USB cable.

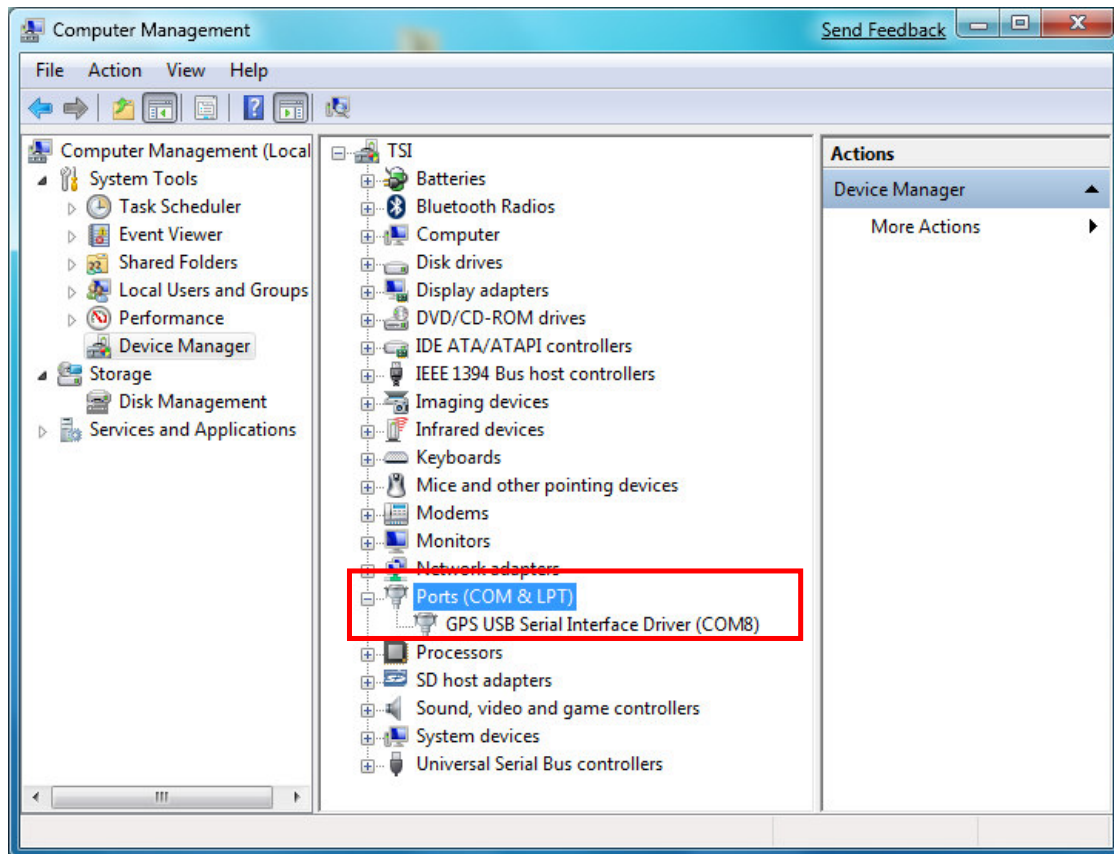
AGPS data will expire after 6 days.

## i. GpsView

The GpsView program only supports Microsoft Windows XP, Vista and Win 7 OS.

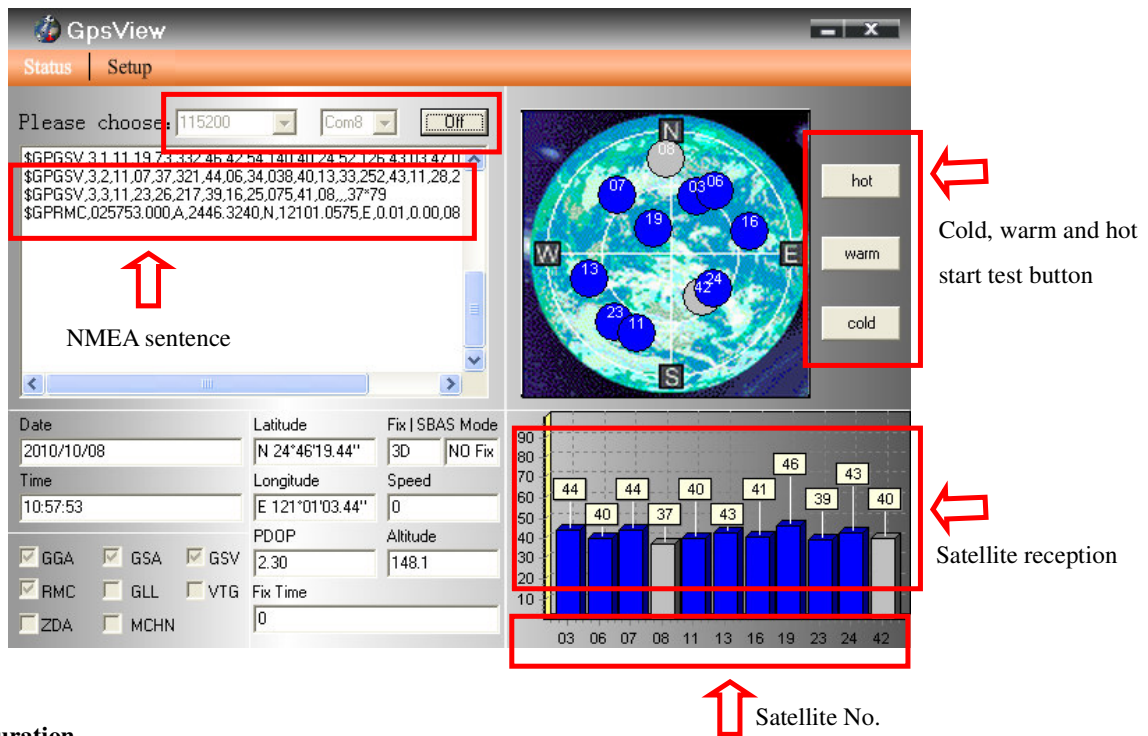
### i-1. Driver Installation

Connect 821E to PC with power turn on and then go to USB driver folder to click “InstallDriver.exe” to start the installation process. The device manager will assign a COM port for 821E after USB driver has been installed successfully.



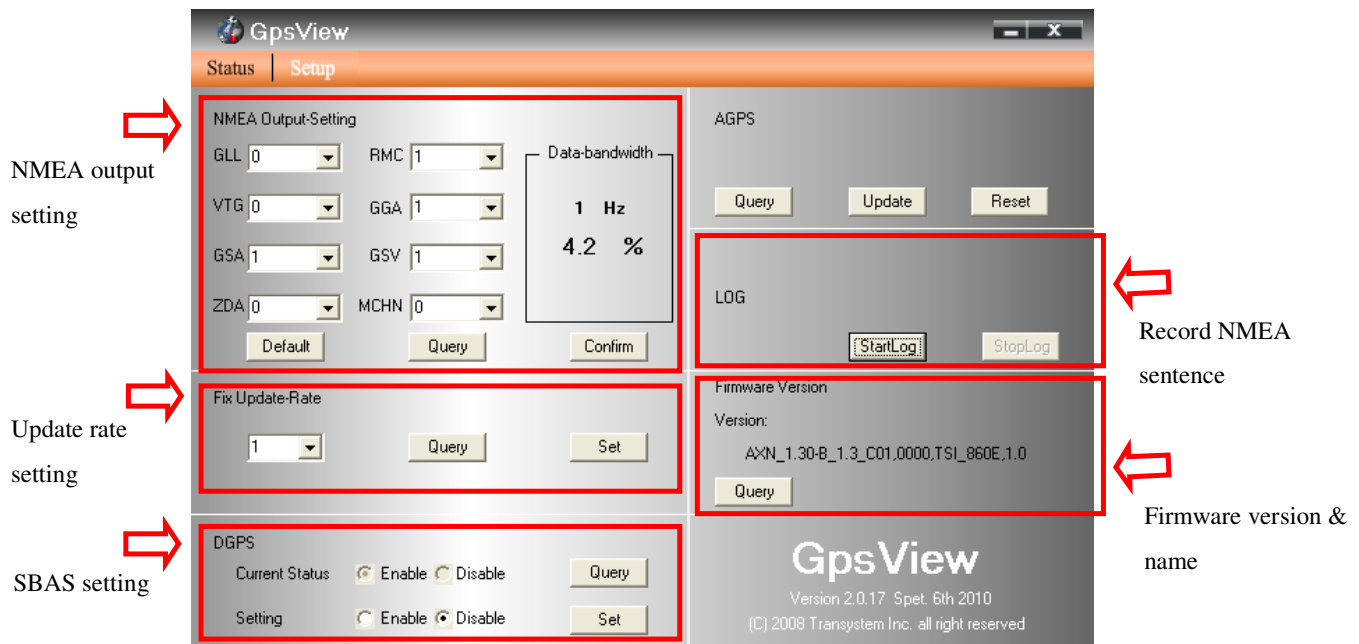
### i-2. GpsView software

Open GpsView software and select correct COM port and Baud Rate and then click “On” button to establish the communication between 821E and PC. If the connection is successful, the NMEA stream will keep showing.



### i-3. Configuration

In Setup Page, Output frequency of each NMEA can be changed from 1second to 5 seconds and Fix update-Rate can be changed from 1 time to 5 times per second. DGPS like WASS, EGNOS, MSAS can be enable or disable. Here also allow users to update the AGPS and record the NMEA sentence.



For example:

NMEA output setting	+	Fix update-rate	=	Real NMEA output
GGA(1), GSA(1), GSV(1), RMC(1)	+	1	=	GGA(1), GSA(1), GSV(1), RMC(1)
GGA(1), GSA(1), GSV(1), RMC(1)	+	2	=	GGA(1/2), GSA(1/2), GSV(1/2), RMC(1/2)
GGA(1), GSA(1), GSV(1), RMC(1)	+	3	=	GGA(1/3), GSA(1/3), GSV(1/3), RMC(1/3)
GGA(1), GSA(1), GSV(1), RMC(1)	+	4	=	GGA(1/4), GSA(1/4), GSV(1/4), RMC(1/4)
GGA(1), GSA(1), GSV(1), RMC(1)	+	5	=	GGA(1/5), GSA(1/5), GSV(1/5), RMC(1/5)
Note:	1. GGA(1) means GGA sentence output every 1 second, GGA(2) output every 2 seconds. 2. GGA(1/2) means GGA sentence output 2 times per second, (1/5) output 5 times per second.			

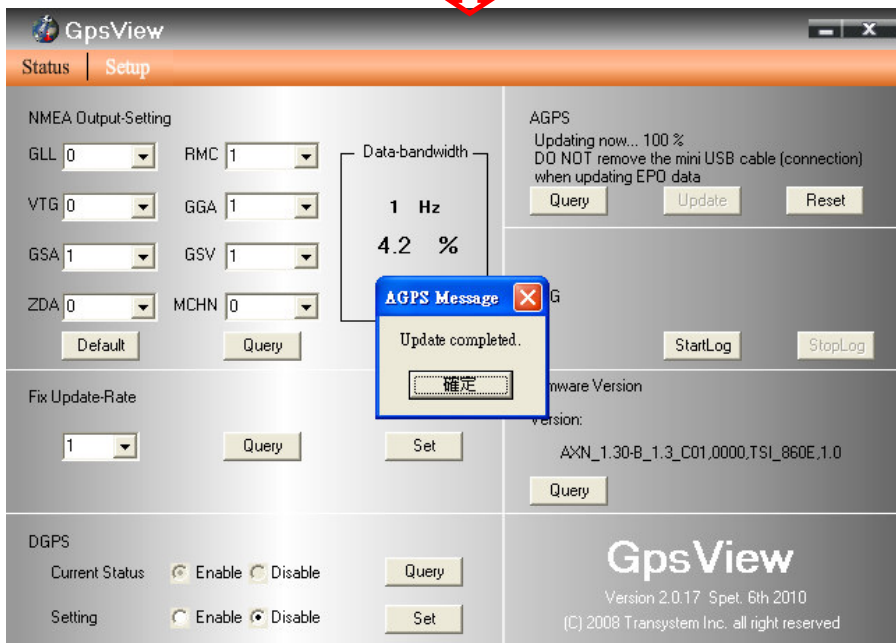
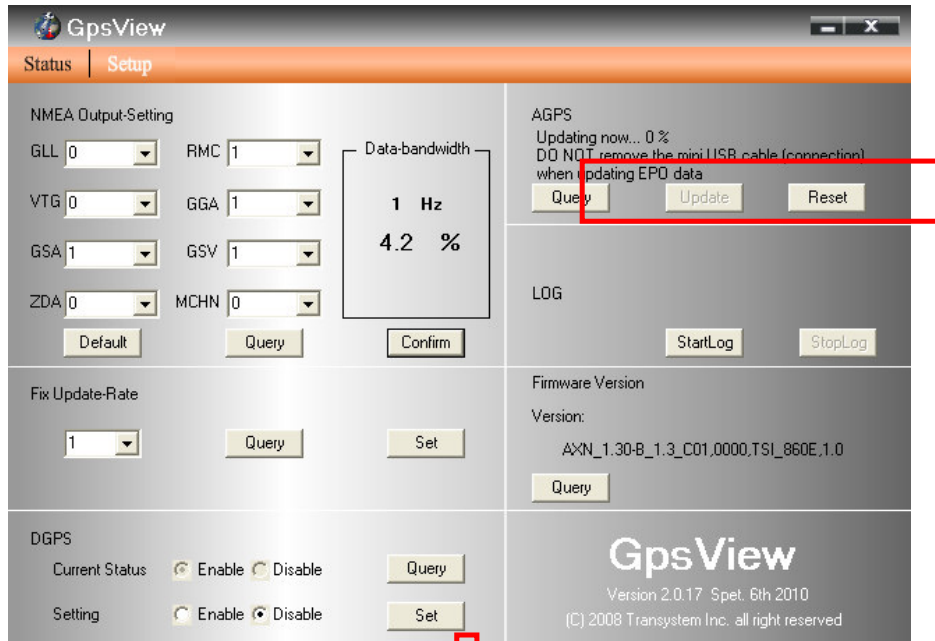
#### i-4. Update AGPS

Step1. Make sure you have network available for accessing the internet.

Step2. Connect 821E to PC and then open GpsView to establish the communication.

Step3. Go to “**Setup**” page

Step4. Click “**Update**” button under AGPS to update the AGPS data. The program will connect to the AGPS server and download the data automatically. You can also check the valid time of AGPS by clicking **Query**. Clear AGPS data by clicking **Reset**.

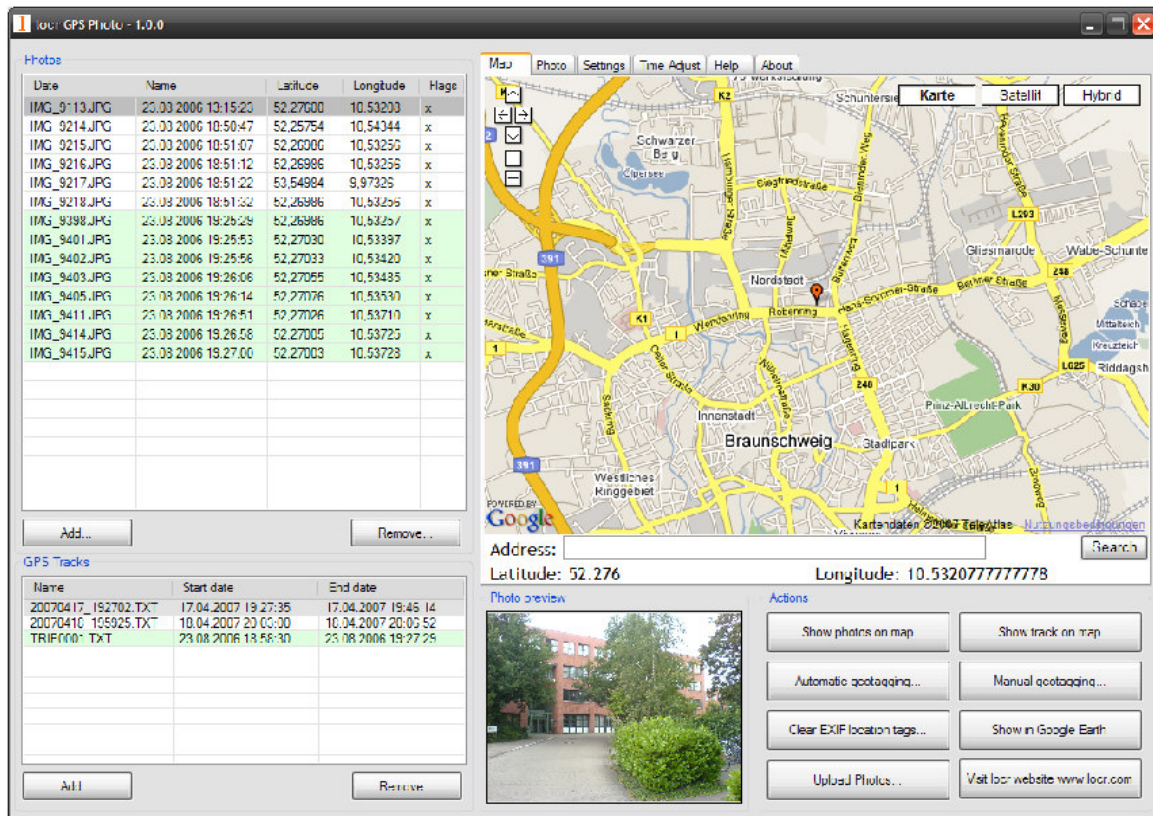




## j. Free software from partners.

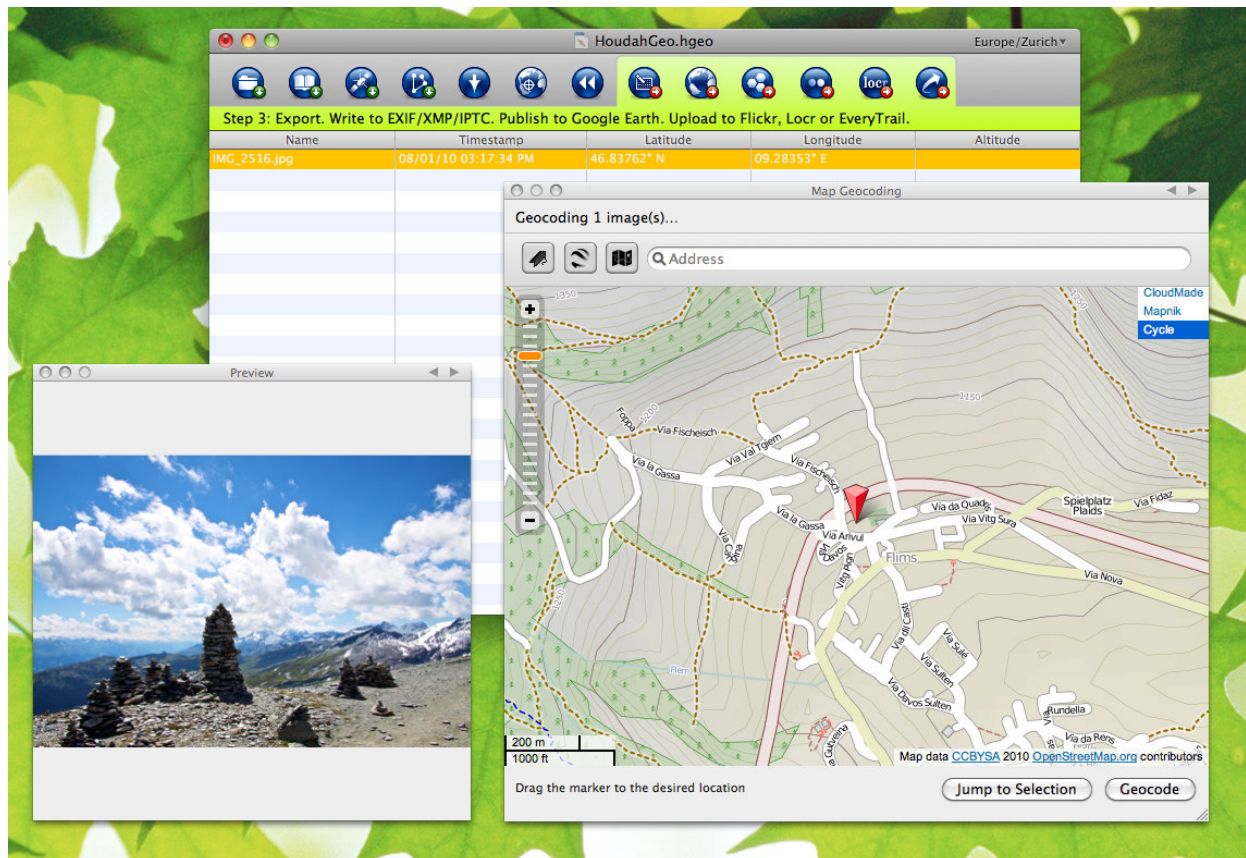
- locr GPS Photo software.

Please find the installation file for Windows in CD tool, or go to <http://www.locr.com> for further information.



- HoudahGeo

Please find the installation file for Mac in CD tool, or go to <http://www.houdah.com> for further information.



## **k. Certification**

### **FCC Notices**

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 interface, and
2. This device must accept any interference received, including interference that may cause undesired operation.

FCC RF Exposure requirements:

**This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.**

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHOURIZED MODIFICATION TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT

### **CE Notice**

Is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility (89/336/EEC), Low-voltage Directive (73/23/EEC) and the Amendment Directive (93/68/EEC), the procedures given in European Council Directive 99/5/EC and 89/3360EEC.

The equipment was passed. The test was performed according to the following European standards:

- EN300440 EN 300 440-2 V1.3.1 (2009-03)
- EN301489-1 EN 301 489-1 V1.8.1: 2008-04
- EN301489-3 EN 301 489-3 V1.4.1: 2002-08
- EN55022 EN 55022 2006+A1 2007
- EN55024 EN 55024 1998+A1 2001 + A 2003
- EN60950-1 EN60950-1 /A11:2009

## **l. Warranty information**

Thank you for your purchase of GPS product from the company.

The company warrants this product to be free from defects in materials and workmanship for one year from the date of purchase. The warranty for accessories is six months. The stamp of distributor or a copy of the original sales receipt is required as the proof of purchase for warranty repairs. The company will, as its sole option, repair or replace any components, which fail in normal use. Such repair or replacement will be made at no charge to the customer for parts or labor. The customer is, however, responsible for any transportation costs.

This warranty does not cover failures due to abuse, misuse, accident or unauthorized alteration of repairs. The company assumes no responsibility about products which have been improperly used, abused, damaged due to accident or natural disaster, or damaged due to unauthorized uninstallation, repair or modification.