# 860 PRO PersonalMate GPS

## User's Manual

V0.2

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# Chapter 1 Before you begin

## 1.1 Note and Warning

- 860 PRO uses + Lithium-Ion battery. If 860 PRO is used in temperature lower than -10℃ or higher than 60℃, its battery charging capability will decrease. Please leave the 860 PRO far from heat or high temperature environment. In addition, do not expose your 860 PRO in temperature higher than 140℉/60℃. If you do not follow these rules, the battery inside 860 PRO may overheat, explode or burn itself, and this will lead to very serious damage. The + Lithium-Ion battery inside the 860 PRO should be recycled.
- While in the hospital, turning off the 860 PRO is recommended. Wireless GPS receiver may interfere with medical equipments which use radio frequency.
- For safety, keep the 860 PRO and all accessories out of children's reach.
- The manufacturer assumes no responsibility for any damages and loss resulting from the use of this manual, or from deletion of data as a result of malfunction, dead battery, or from misuse of the product in any way.
- Use only the supplied and approved accessories. Unauthorized accessories, modifications or attachments could damage the 860 PRO, and may violate regulations governing radio devices.
- Use a dry, clean soft cloth to clean the unit. Do not use harsh cleaning solvents, chemicals, or strong detergents.

- Do not attempt to open the 860 PRO yourself. Unauthorized hacking may damage the unit, and void your warranty.

## 1.2 Introduction

This 860 PRO logger features an all-in-one, cost-effective portable GPS logging solution. With its on-board memory, it allows you to log your routes by ways of time/ distance/ speed. Points of interest can also be recorded by a push button. Through user friendly software utility, it shows your track on Google Earth. This recorder is small and robust, ideal to carry everywhere for applications such as route tracking, mountain climbing or fleet management.

## 1.3 Features

1. Dual mode for both Data record and Navigation.
2. Push button to record data manually.
3. User can record the date by setting the interval of time, distance and speed.
4. Up to 125,000 waypoints.
5. Semi indoor.
6. AGPS available.
7. Vibration function
8. Fuzzy Auto on/off.
9. GPS Photo Tagger software.
10. Support G-Mouse

## 1.4 Applications

- Record your travels
- Manage business trip expense
- Concerned about one's driving behavior
- Record Point of Interest by a push button
- Geo-photo

## 1.5 Appearance

1. DC jack (mini USB type)
2. Mode switch (Power off/ Navigation/ Navigation& log)
3. Bluetooth status LED (blue)
4. GPS status LED (orange)
5. Log& POI LED (Red)
6. Battery status LED (red/green)
7. POI Button

### 1.6 Power Switch and Push Button

| Power Switch | |
|---|---|
| Right (Off) | Power off |
| Middle (NAV) | Enable Navigation mode |
| Left (LOG) | Enable Navigation + log mode |
| Push button | |
| Push | Push to log points of interest, LED blinks 3 times. |

Difference between NAV and LOG:

| | |
|---|---|
| NAV | Working as a Bluetooth GPS receiver. |
| LOG | Both of navigation and logging functions are enabled. |

### 1.7 LED Display

The 860PRO PersonalMate GPS has four LED lights, one is Bluetooth Status LED, the 2nd one is GPS Status LED, the 3rd one is Log / Memory Status LED, the 4th one is Battery Status LED. The status table of LED shows as follows:

| Category | SYMBOL | COLOR | STATUS | Function |
|---|---|---|---|---|
| Bluetooth Status LED | | Blue | Always on: | Bluetooth on, but not connected to any Bluetooth devices yet |
| | | | Slowly blinking: | Sleeping mode |
| | | | Quickly blinking: | Bluetooth is connected and ready for data transmission |
| GPS Status LED | | Orange | Always on: | Acquiring satellites, GPS position not fixed |
| | | | Quickly Blinking: | GPS position is fixed, Navigation |
| Log Status LED | | Red | Quickly Blinking: | LED blinks 3 times, Points of Interest is recorded |
| | | | Slowly Blinking | The memory space is too low (20% left now) |
| | | | Blinking | Log mode |
| Battery Status LED | | Red | Blinking: | The battery is too low |
| | | Green | Light On: | The battery is charging |
| | | Green | Light Off | The battery is fully charged |

# Chapter 2 Getting Started

## 2.1 Checking the package content

Congratulations on your purchase of the 860 PRO. Before you start using 860 PRO, please make sure if your package includes the following items. If any item is damaged or missing, please contact your dealer at once.

- 860PRO PersonalMate GPS x 1
- USB to mini-USB cable x 1
- DC cigarette lighter adapter x 1
- CD Tool x 1 (user manual, software utility, driver)
- Quick start guide x 1

*Unit package contents may vary depending on countries without prior notice.
*NOTE: The Cigarette Adapter can only be used to charge 860 PRO. Please don’t make use of it with devices other than 860 PRO.

## 2.2 Getting Started

Please follow the procedure step by step.

**Step 1 Charging Your Battery**

To charge your 860 PRO, you have to plug your USB cable into the power source. Charging time is about 3~4 hours and you can charge from PC/ Notebook's USB HOST or from cigarette-lighter in car.

For the 1st time you use the 860 PRO, please charge battery until it is full (the green LED blinks). The LED that represents the battery is the left-most battery icon (shown in below).

- If the LED is red, that means battery power is critically low. Charge immediately.
- If the LED is green, that means battery is charging now.
- If the no LED light indicate that means battery is fully charged.

**Step 2 Turning on the power switch (NAV/ LOG)**

Power off

Navigation

Data record

Difference between NAV and LOG:

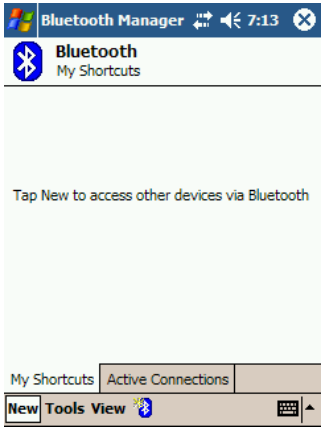
| | |
|---|---|
| NAV | Working as a Bluetooth GPS receiver. |
| LOG | Both of navigation and logging functions are enabled. |

**Step 3 Connecting your handheld device with 860 PRO**

Please refer to the user manual of PDA to enable the Bluetooth connectivity. If the connection between your device and 860 PRO is successful, the blue LED of 860 PRO will be blinking.

Below, we provide a common procedure of software installation to set up your PDA. (For other PDA, the steps may be different. Bluetooth Manager is a popular program used on Bluetooth device.)

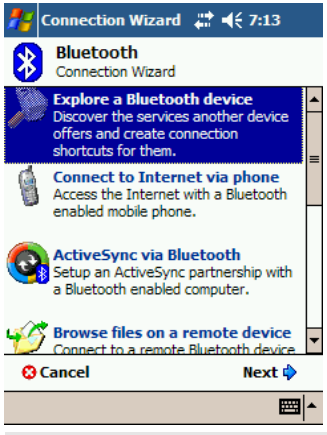
-->




Start -> Bluetooth Manager

New

**1. Open "Bluetooth Manager" on your pocket pc, and establish a new connection.**




-->

Explore A Bluetooth device ->Next

Tap 860PRO

**2. Explore a Bluetooth device, and find the “860PRO”**

Passkey 0000 (if your PDA asks for the passkey)

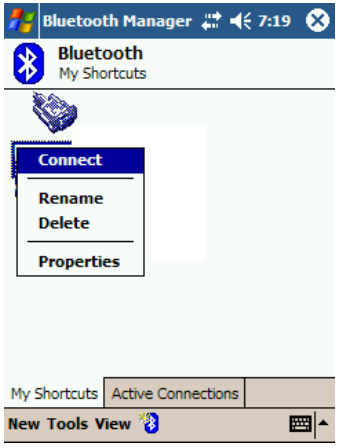
**3. (Optional)**

Select SPP slave->Next

-->

Finish

## 4. Connect to Serial Port Profile (SPP) Slave




-->

Tap and Hold 860PRO SPP slave, Connect

Done

## 5. Finish Bluetooth Manager Setup

## Step 4 Loading your GPS mapping or routing software

You should have mapping software on your PDA/ Smartphone/ laptop or you need to install it before using the 860 PRO for navigation.

## Step 5 Starting the application

Select the correct COM port & baud rate within the application.

Note: The Bluetooth device in most of the applications has an "auto-detect" feature so that you do not need to select the Baud Rate.

## 2.3 Helpful Tips

- It’s better to turn off the 860 PRO when you don’t use it, or the serial Flash's life can’t last long.
- 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 may affect signal receptions.
- In general, any GPS receiver performs best in open space where it can see clean sky. Also weather will affect GPS reception – rain & snow contribute to worse sensitivity.
- Low battery of a PDA or of an 860 PRO may affect signal receptions.
- Please check the correct “COM” and “Baudrate” of your PDA.
- 860 PRO output data updates every second, therefore the actual position and the position shown in your map may have slight time delay. This may happen when you drive at higher speed or make a turn around a corner.
- Note that 860 PRO may not work indoors where it can not see the sky.
- For the 1$^{st}$ time you use the 860 PRO, it will take 1 to 3 minutes to obtain the satellite constellation information and fix your position, this is called “Cold Start”. If you replace the battery, 860 PRO will do Cold Start again.
- If your 860 PRO can’t fix your position for more than 20 minutes, we suggest you change to another spot with open space and then try again.

# Chapter 3 How to configure your GPS Record ?

The GpsView program only supports the Microsoft Windows based platform.

## 3.1 Driver Installation

Before the USB connector plugs in your PC/ Laptop, please have your USB Driver Installation ready. (Install InstallDriver.exe driver for USB port from CD-ROM.)

## 3.2 GpsView software

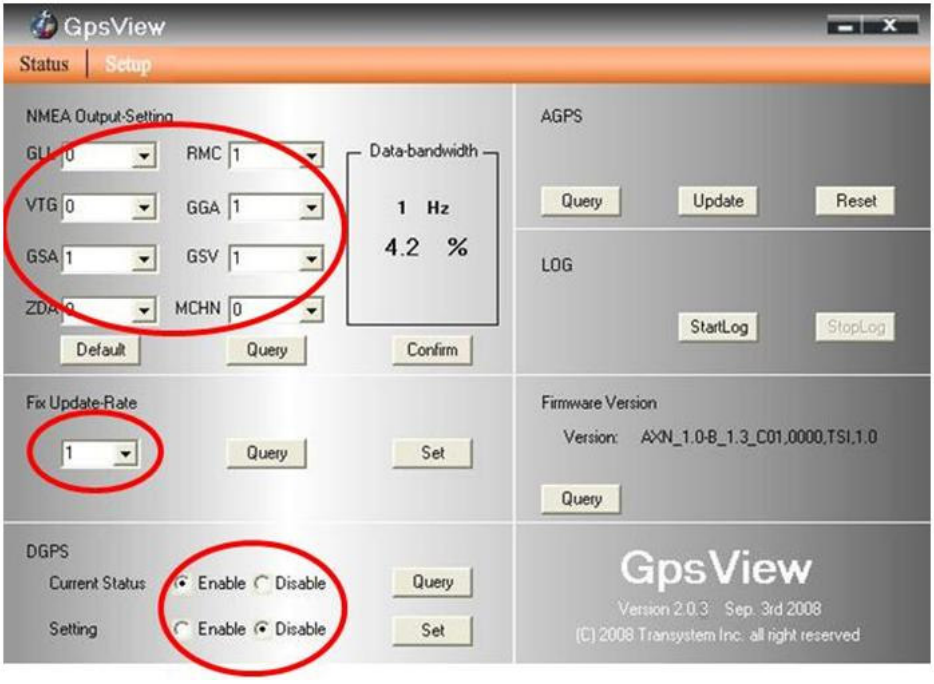
Open the GpsView software, please select correct COM port and Baud Rate (USB / Bluetooth: 115,200bps) to configure GPS.

### 3.2.1 Connect USB cable between GPS and laptop

To USB port on PC/Laptop

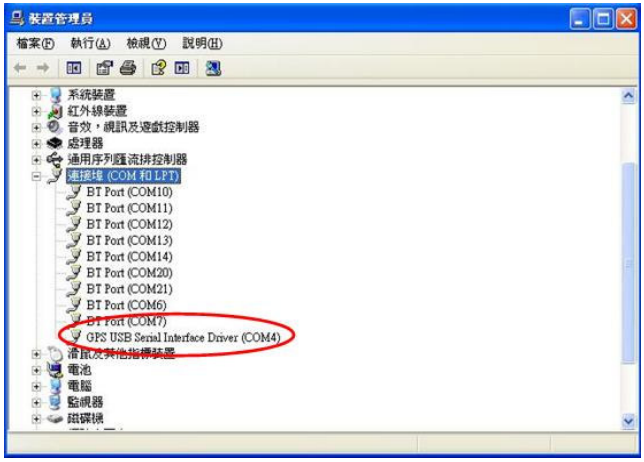
### 3.2.2 Executing GpsView Program

Click “Command” tap. Update Rate 1 ~ 5Hz is user configurable. And still more options for choice of NMEA output, DGPS…etc. all available through pull-down menus.

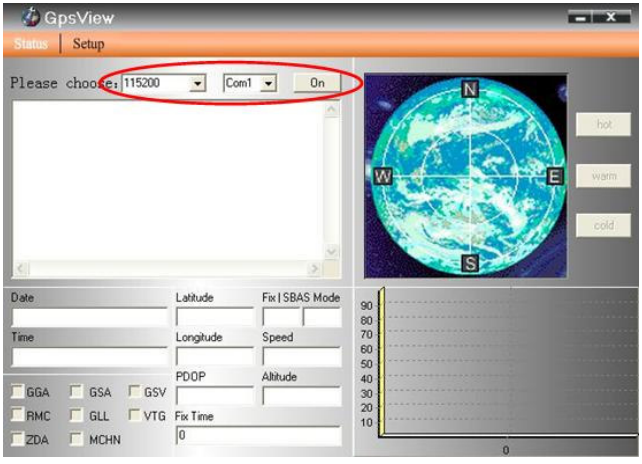



### 3.2.3 Download AGPS

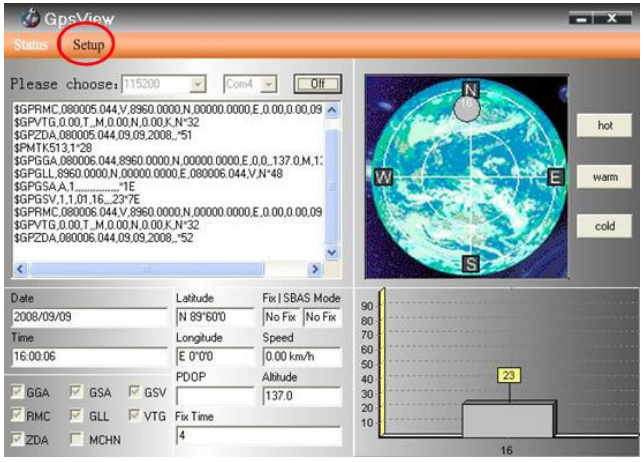
1. Start→Control Panel→System→Hardware→Device Management→Connector（COM and LPT）Check Com port position。



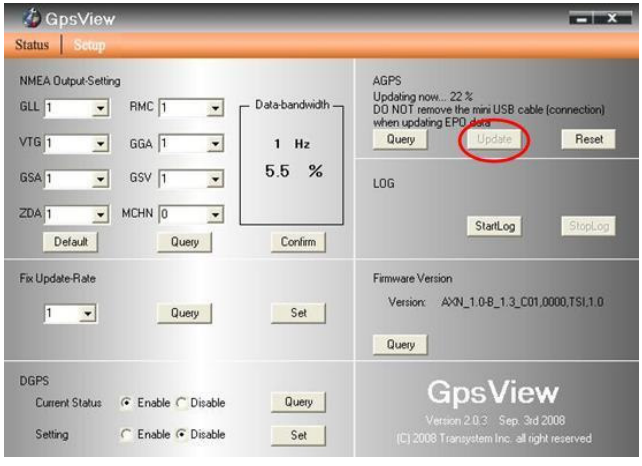

2. Open GpsView.exe→Check Baud Rate and Com port→ click On



3. Choice Setup




4. Choice Update。



5. When Updating now…100%, click Enter complete。

NOTE: When you use AGPS function, we suggest use GpsView to download the AGPS data via USB cable. AGPS has 6 day time limited.

# Chapter 4 Using Photo Tagger software

## 4.1 Execute and install software utility Photo Tagger

Complete GPS Photo Tagger and USB drivers installation (Refer to CD)

## 4.2 Google Earth

If you computer is not yet installed with Google Earth. Google Earth has free download version, go download it in the internet first. For more information, please visit http://earth.google.com/

## 4.3 Software Utility --- GPS Photo Tagger

For further function to use the Photo Tagger software in detail, please refer to Photo Tagger user manual:
Photo Tagger software > Help > User Manual

To use a mini-USB cable to connect the 860 PRO to your PC, you have to power on the 860 PRO. Please keep in mind to switch to LOG mode while using Photo Tagger software.

# Appendix

## Appendix A. Specifications

| | |
|---|---|
| **General** | |
| Frequency | L1,1575.42MHZ |
| C/A Code | 1.023MHZ |
| Datum | WGS84 |
| **Performance Characteristics** | |
| Position Accuracy | Without aid: 3.0m 2D-RMS |
| | <3m CEP(50%) without SA(horizontal) |
| | DGPS (WAAS,EGNOS,MSAS):2.5m |
| Velocity Accuracy | Without aid: 0.1m/s |
| | DGPS (WAAS,EGNOS,MSAS):0.05m/s |
| Acceleration | Without aid:<4g |
| | DGPS (WAAS,EGNOS,MSAS):<4g |
| Timing Accuracy | 50 ns RMS |
| Reacquisition Time | <1s |
| Hot start | 1.5s |
| Warm start | 34s |
| Cold start | 35s |
| AGPS | <15s |
| Sensitivity | Acquisition:-148dBm Max. |
| | Tracking:-165dBm Max. |

| | |
|---|---|
| Update | 1Hz |
| **Dynamic** | |
| Altitude | Maximum 18,000m |
| Velocity | Maximum 515m/s |
| Acceleration | Maximum 4g |
| **Power** | |
| Input Voltage | Vin : 5.0V±5% |
| **I/O** | |
| Available Baud Rates | 115200 bps |
| Protocols | NMEA 0183 v3.01 |
| **Environment** | |
| Operating Temperature | -10 ~ 60C |
| Storage Temperature | -20 ~ 60C |
| Charging | 0 ~ 45C |
| **Bluetooth** | |
| Standard | Fully compliant with Bluetooth V1.2 |
| Output Power | 0dBm (Typical), ClassII |
| Range | Over 10 meters |
| Bluetooth Profile | Serial Port Profile(SPP) |
| Frequency | 2.4G ~ 2.4835GHz ISM Band |
| Security | Yes |
| **USB Bridge** | |

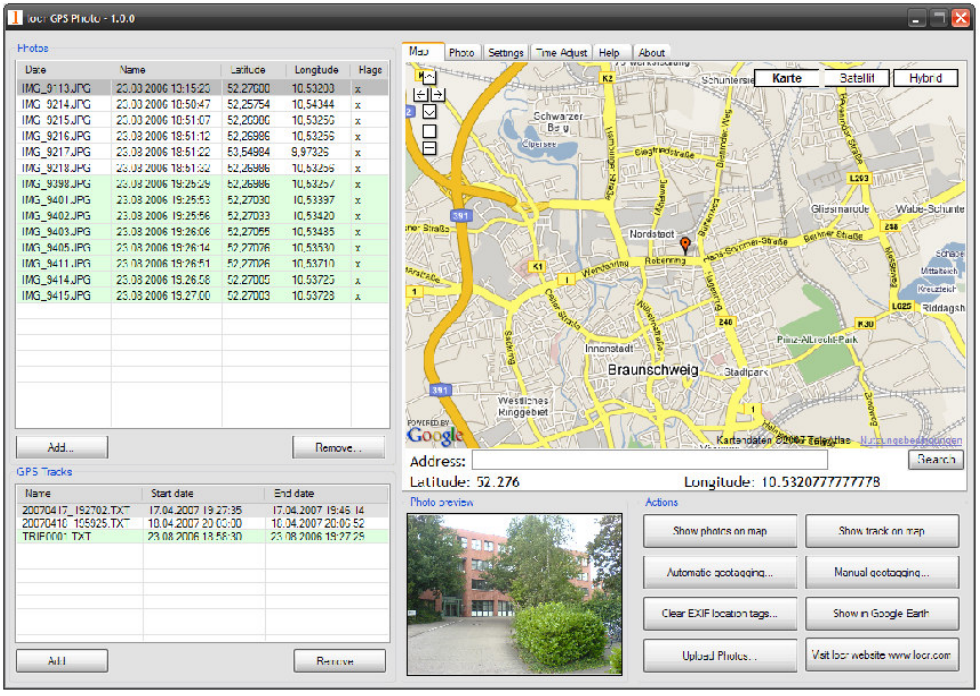
| | |
|---|---|
| Standard | Fully compliant with USB2.0 |
| Full – speed | 12Mbps |
| Dimension | 46.5 x 72.2 x 20 mm |
| **Data Log** | |
| 32M bit serial Flash | |
| 125,000 way points or more | |
| Log GPS data by time interval/ distance/ speed limit. | |
| Log GPS data by button push. | |
| User can configure settings by using utility. | |

***.Citation MTK original chipset spec.**

## Appendix B. locr GPS Photo

With 860 PRO and locr GPS Photo software, users are allowed to import geotagging adds information to photos. The position (latitude/ longitude) then be written into the EXIF header for the further application. Also, locr GPS Photo can integrated travel log and digital photos by date/ time to show photos on the map directly.

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



## Appendix C. 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 Notices

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:

- EN 300 328-2 V.1.2.1 (2001-08)
- EN 301 489-1 V.1.4.1 (2002-04) / EN 301 489-17 V.1.2.1 (2002-04)
- EN 50371: 2002
- EN 60950: 2000

## Appendix D. 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 for special, incidental punitive or consequential damages, or loss of use.