

“The How to Guide...”

DataTap™ Software, BT-GPS and Applications for Palm Devices

Version 1.1c

www.AptoLink.com

Outline

For
Palm
Devices

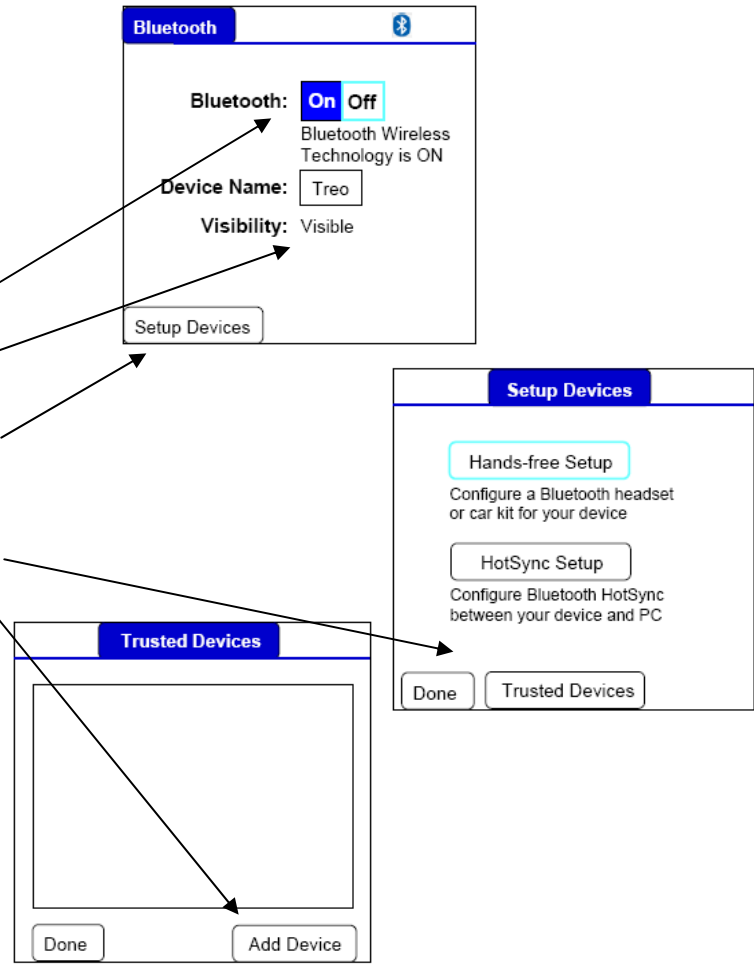
- **Windows-based Handheld Operation – Palm Devices**
 - Initial set up instructions for Connecting BT-GPS Devices Slides 4, 5
 - Reconnect BT-GPS to Handheld instructions Slide 6
 - Logging Continuous GPS Data (in [.TXT file format](#)) Slides 8, 9
 - Logging Discrete, or Point GPS Data (in [.CSV file format](#)) Slide 10
 - Setting up Options, Features Slide 11 thru 13
 - Applications
 - Plotting Continuous GPS Data using [Google Maps/Google Earth](#) Slides 14 thru 17
 - Plotting Discrete GPS Data using [Google Maps/Google Earth](#) Slides 18 thru 23
- **BT-GPS Device Features and Specifications** Slide 24, 25
- **Contact Information** Slide 26

Setting up and Connecting BT-GPS Device to a *Palm-based Handheld*

For Palm Devices

Connect BT-GPS Device to Handheld's BT

- Palm-based Handheld – Initial Set up**
 1. Turn on BT-GPS device (called 886 GPS or other preferred device)
 2. In the “All” screen, tap on the Bluetooth icon
 3. Turn On the Handheld’s Bluetooth
 4. Select “Visible” under Visibility
 5. Tap on Setup Devices at the bottom of the screen
 6. Selected Trusted Devices, then select Add Device at the bottom of the screen



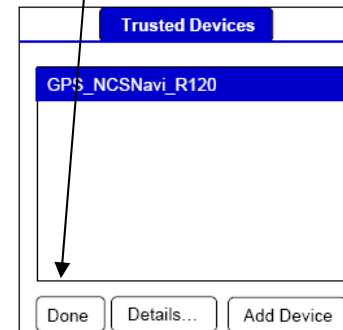
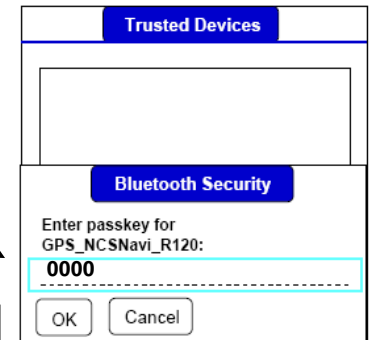
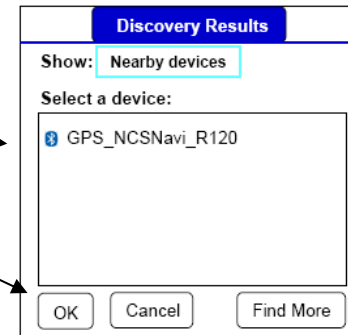
NOTE: Each Handheld may have a slightly different screen to follow.

For Palm Devices

Connect BT-GPS Device to Handheld's BT

- Palm-based Handheld – Initial Set up, cont**

- Select BT-GPS device (called **886 GPS** or other preferred device), then tap on **OK** at bottom of screen
 - Handheld will scan for BT-GPS
 - If Handheld doesn't find the BT-GPS device, then tap on **Find More**. It will look for "more" devices not previously scanned
- Enter passcode **0000** (four zeros), select **OK**, then **Done** at bottom of screen
 - Four zeros is default standard for BT devices
- Click on **Home** button to return to the "All" screen



NOTE: Each Handheld may have a slightly different screen to follow.

Reconnect BT-GPS Device to Handheld's BT

For
Palm
Devices

- **Palm-based Handheld – *Reconnecting***
 1. Turn on BT-GPS device (called **886 GPS** or other preferred device)
 2. In the “All” screen, tap on the **AptoLink** icon
 3. Tap on **AptoLink** at top of screen, then **Comm**, then **Open**
 1. Make sure the screen is set up according to slide 8
 4. Tap **OK**
 1. The Handheld's BT will start searching for the BT-GPS device
 5. Select the BT-GPS device, (called **886 GPS** or other preferred device), then tap **OK**
 1. The Handheld's BT is now connected to the BT-GPS device and GPS data is streaming into the Handheld

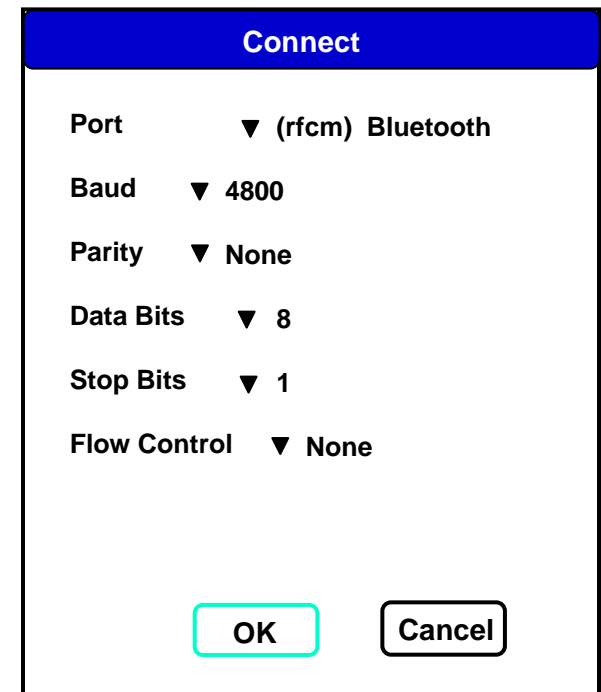
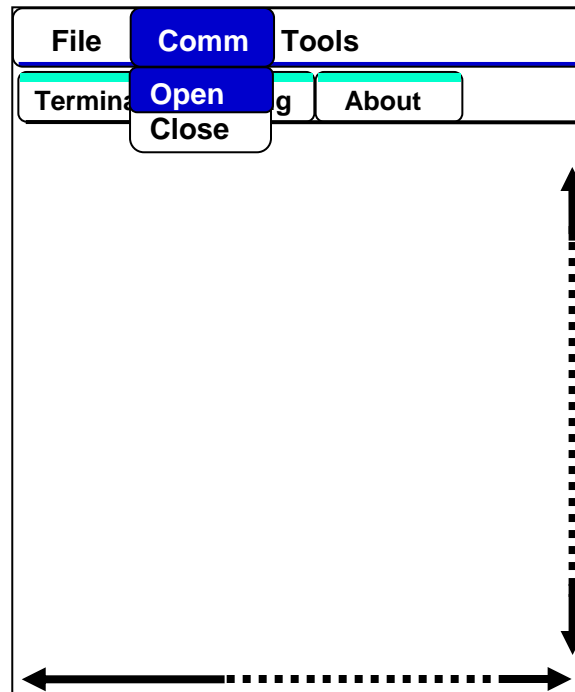
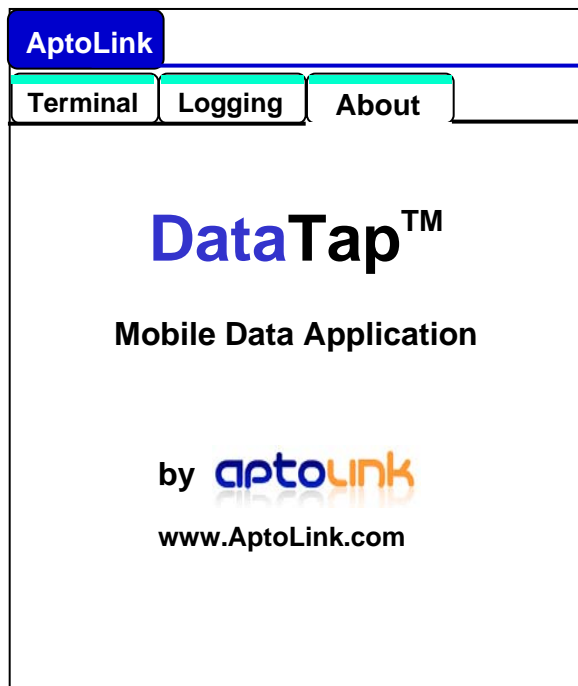
NOTE: Each Handheld may have a slightly different screen to follow.

Collecting, or Datalogging, GPS Data for a *Palm-based Handheld*

Connect BT-GPS Device to Handheld's BT

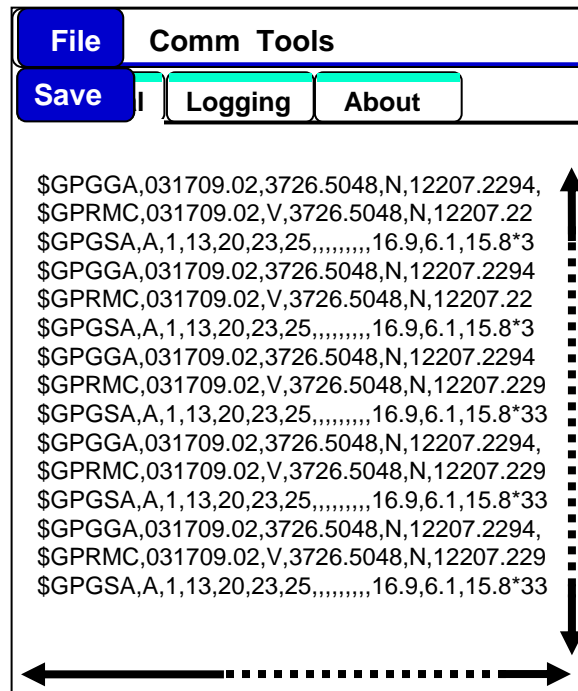
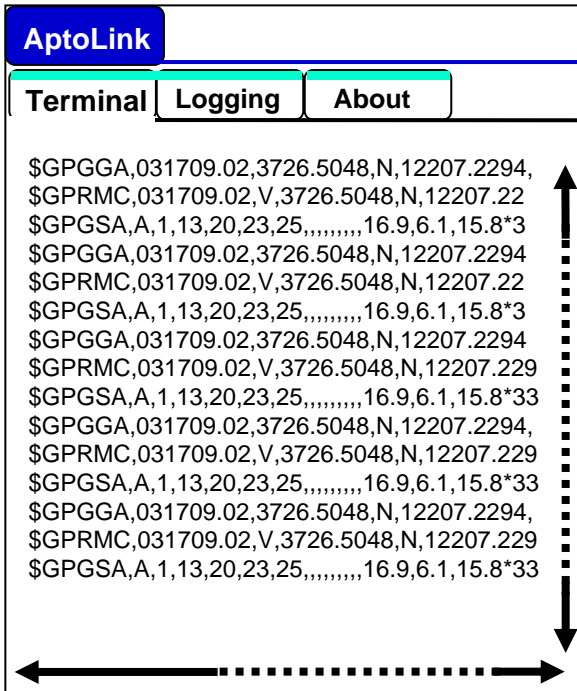
For
Palm
Devices

- [Palm OS version](#), with DataTap open on screen...
 - To connect GPS device to handheld, and GPS data to DataTap
 - At top of screen, tap on **AptoLink**, then **Comm**, then **Open**, then **OK**
 - Select the BT-GPS device in the **Discovery Results** window, select **OK**



Collecting Continuous GPS Data

For Palm Devices



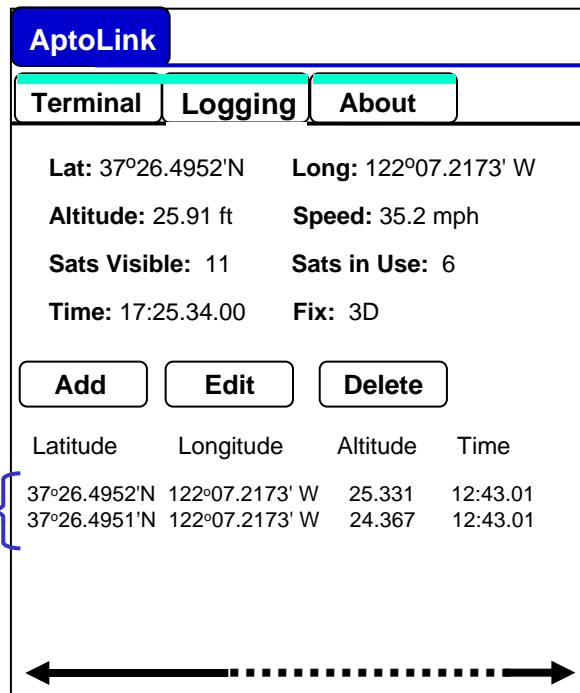
Saving GPS Data to a File

1. Tap on the **Terminal** tab.
2. Tap on **AptoLink** at top of the screen.
3. Tap **Save**.
4. Data is then saved in **Memos**. Up to 12 Kbytes to 15 Kbytes are saved at a time in Memos.

NOTE: This file size is due to the limitation of Palm memory buffer. Each time GPS data is to be saved, tap on **AptoLink**, then tap on **Save**, and the latest 12 Kbytes to 15 Kbytes is saved. Memos will accumulate each file that you save, separate from the others and are numbered 1, 2, 3, etc.

Collecting Discrete Point GPS Data

For
Palm
Devices



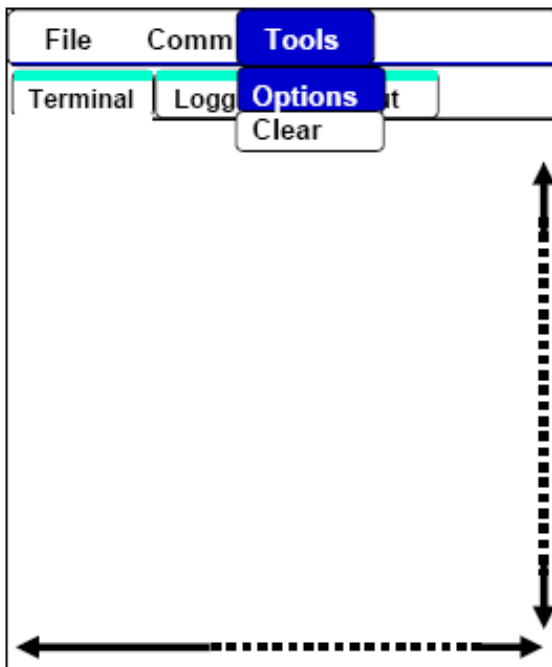
Two locations have been saved

Saving the GPS Data to a File

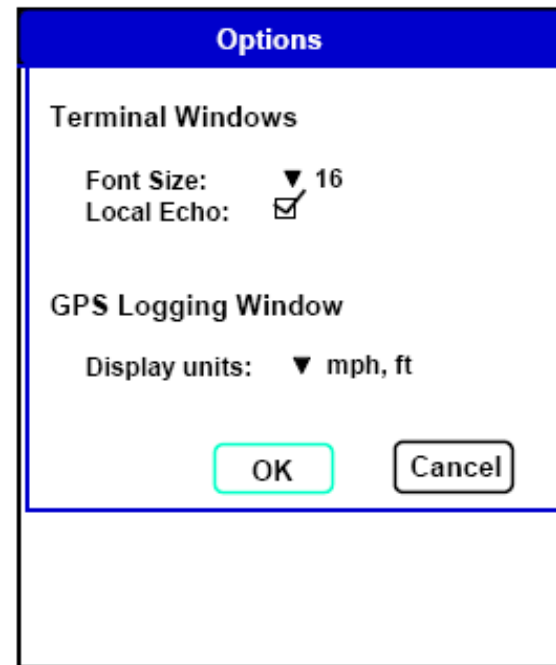
1. Tap on the **Logging** tab.
2. To add a location, tap **Add** button. Input a note or comment, then tap on **OK** button.
3. To edit a line (or location), tap on the line, and then tap on **Edit**. Input the change, tap on **OK** button.
4. To delete a line (or location), tap on the line, and then tap on **Delete**. Input the change, tap on **OK** button.
5. To save the file ... the file is automatically saved in a .CSV (i.e. an .XLS) format in the handheld's memory. When the user HotSyncs their Palm to their PC, the file is automatically transferred to their PC.

For
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Additional Features



-**Clear** will clear the screen of data. When user is in Terminal screen it will clear data on the screen. When user is in Logging screen, it will clear data on the screen



-**Font size** effects the size of the characters in Terminal screen.
-**GPS Units** can be selected between **English** or **Metric** system.

DataTap Functional Features

With DataTap Open...

- User can move from one screen to another but GPS data will not continue to be save in memory buffer until user returns to screen data is being collected in
 - This is a limitation of the Palm OS
- User can change font size of GPS data
 - While in DataTap, go to [AptoLink / Tools / Options](#), select [font size](#)
- User can change measurement units displayed
 - While in DataTap, go to [AptoLink / Tools / Options](#), select [English or Metric](#) system
- User can Clear the Terminal or Logging screen of displayed data
 - While in DataTap, go to [AptoLink / Tools / Options](#), select [Clear](#)

DataTap Functional Features (Cont)

With DataTap Open...

- **Speed** threshold is set at 0.8 mph, i.e. an object moving less than 0.8 mph will register 0.0 mph
 - This threshold is set to minimize speed changes based on the inaccuracy of a moving position at low speeds
- If user exits DataTap, GPS connectivity is disconnected and user will have to reconnect to BT-GPS device. However...
 - All data saved in Memos (and saved in .TXT format) will continue to be saved (i.e. not lost due to disconnection) until user deletes data in Memos
 - All data saved in .CSV file will continue to be saved until user HotSyncs to PC, at which time the .CSV file is transferred to AptoLink folder in PC
 - New data in a new .CSV file can then be saved on Handheld; otherwise, data can continue to be added until user clears or deletes data

“Continuous Data” Collection

Collecting and Displaying Data

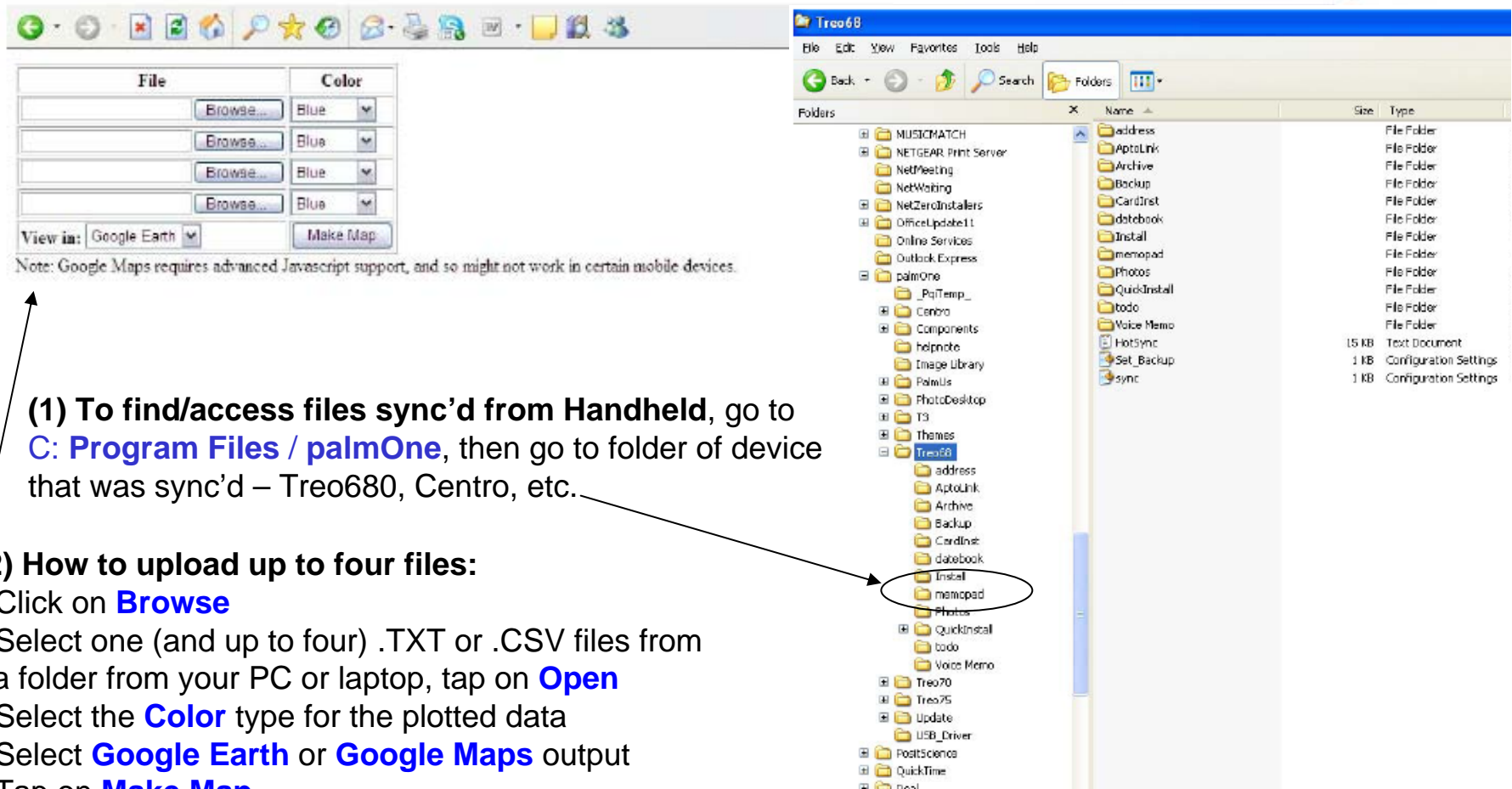
Applications: driving, hiking, cycling, or any activity where the user is in motion, or is dynamic, for most of the activity or travel

- Collect data as described on slide 9
- Connect Handheld to PC using the provided cable, then active HotSync to sync and transfer the collected file(s) to your PC
- Once HotSync is done, user can find in the following area:
 - **.BAK file (i.e. file type converted after sync) in memopad folder in Palm directory on user's PC**
 - Example: to go → C: / Program Files / PalmOne / Treo680 / memopad / ...
- Open Internet browser, and go to www.AptoLink.com/Community/... (to view displayed data)
 - In **AptoGraph**, select **browse**, then select the file on in the folder on your PC that you saved it – **memopad**
 - **To keep data from present file, user should rename memopad file before next file is HotSync'd**
 - Select **Google Maps** or **Google Earth** for the output file type, tap on **Make Map**
 - A **Google Maps** displays the route, an Altitude graph is create along with statistics
 - A .kmz file is created if **Google Earth** is selected, click on the button to open the file

NOTE: Palm directory may also be located under My Documents on the user's PC. This is dependent on which version is being used

Collecting and Displaying Data

For
Palm
Devices



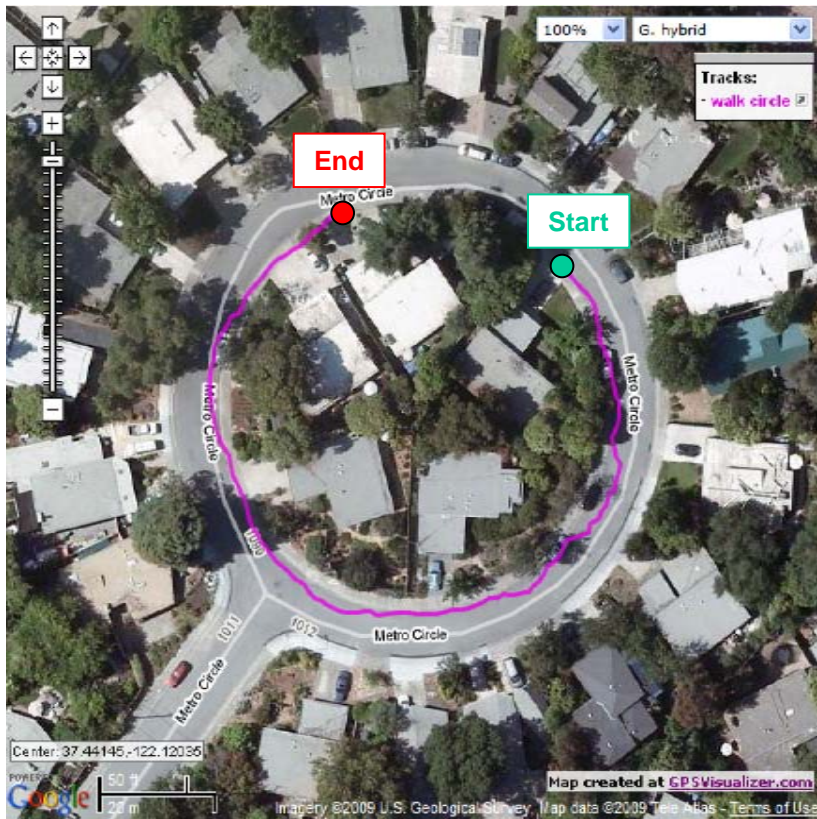
(1) To find/access files sync'd from Handheld, go to **C: Program Files / palmOne**, then go to folder of device that was sync'd – Treo680, Centro, etc.

(2) How to upload up to four files:

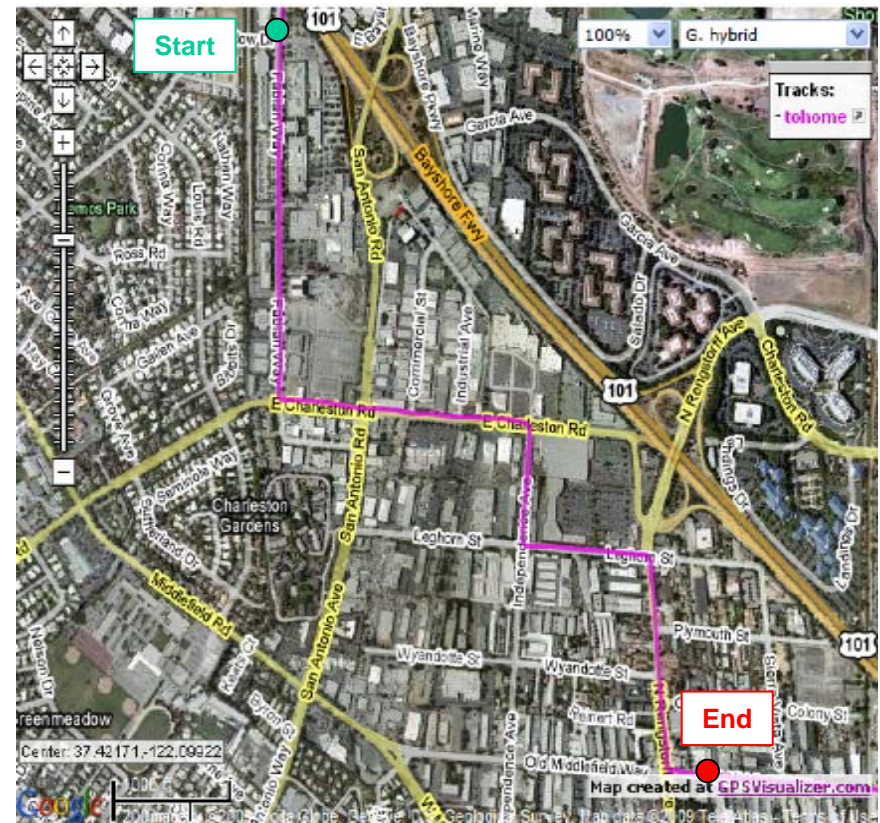
- Click on **Browse**
- Select one (and up to four) .TXT or .CSV files from a folder from your PC or laptop, tap on **Open**
- Select the **Color** type for the plotted data
- Select **Google Earth** or **Google Maps** output
- Tap on **Make Map**

Applications – Display using Google Earth

For Palm Devices



Walk in the neighborhood



Drive to the market or jog to a park, and plot your course

“Discrete or Point Data” Collection

Collecting and Displaying Data

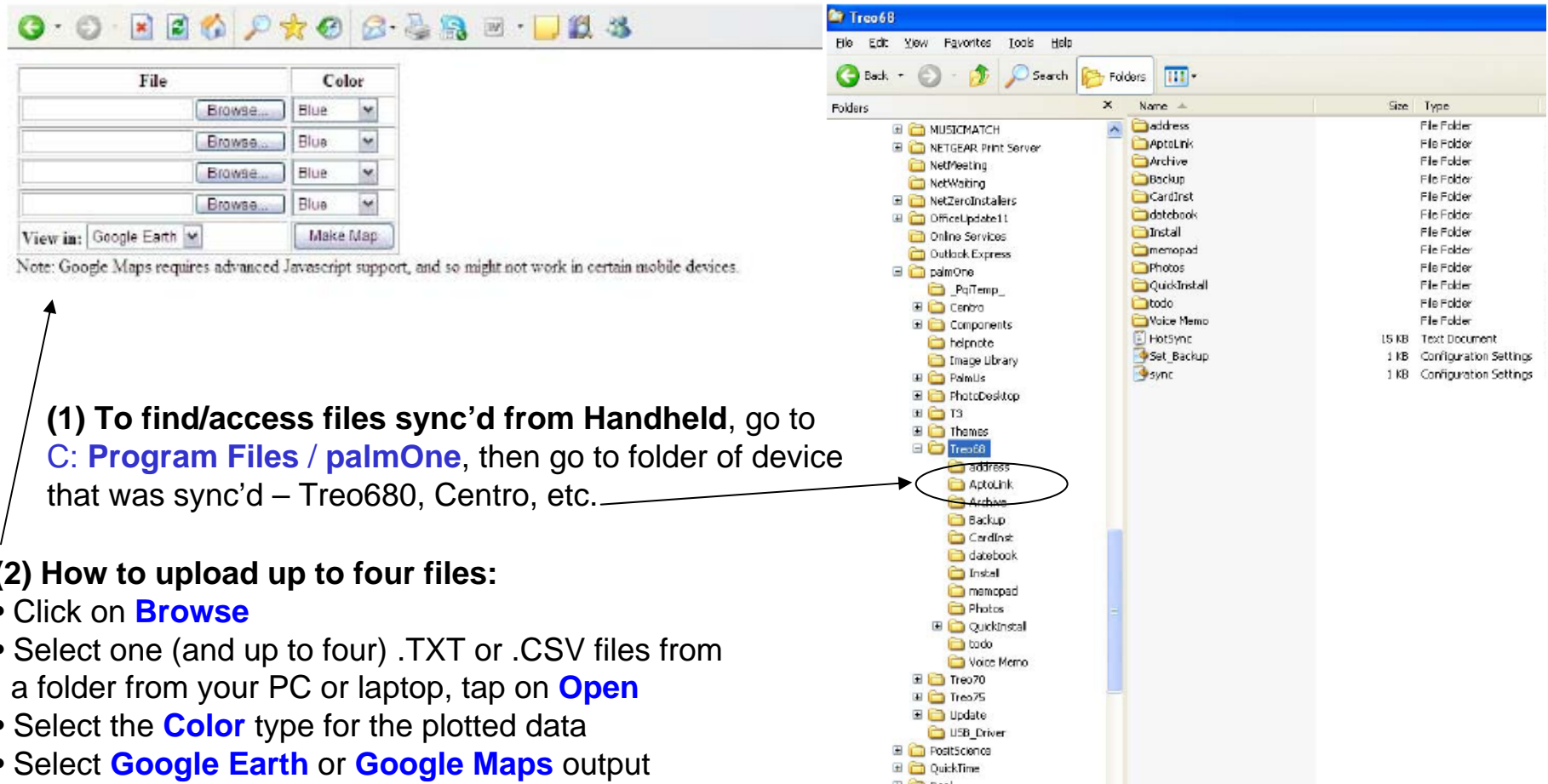
Applications: driving, hiking, cycling, or any activity where the user is in motion, or is dynamic, for most of the activity or travel

- Collect data as described on slide 10
- Connect Handheld to PC using the provided cable, then active HotSync to sync and transfer the collected file(s) to your PC
- Once HotSync is done, user can find in the following area:
 - .CSV files in AptoLink folder in Palm directory on user's PC
 - Example: to go → C: / Program Files / PalmOne / Treo680 / AptoLink / ...
- Open Internet browser, and go to www.AptoLink.com/Community/... (to view displayed data)
 - In AptoGraph, select [browse](#), then select the file on in the folder on your PC – [Fishing.csv](#)
 - Select [Google Maps](#) or [Google Earth](#) for the output file type, tap on [Make Map](#)
 - A [Google Maps](#) displays the route, an Altitude graph is create along with statistics
 - A .kmz file is created if [Google Earth](#) is selected, click on the button to open the file

NOTE: Palm directory may also be located under My Documents on the user's PC. This is dependent on which version is being used

For
Palm
Devices

Collecting and Displaying Data

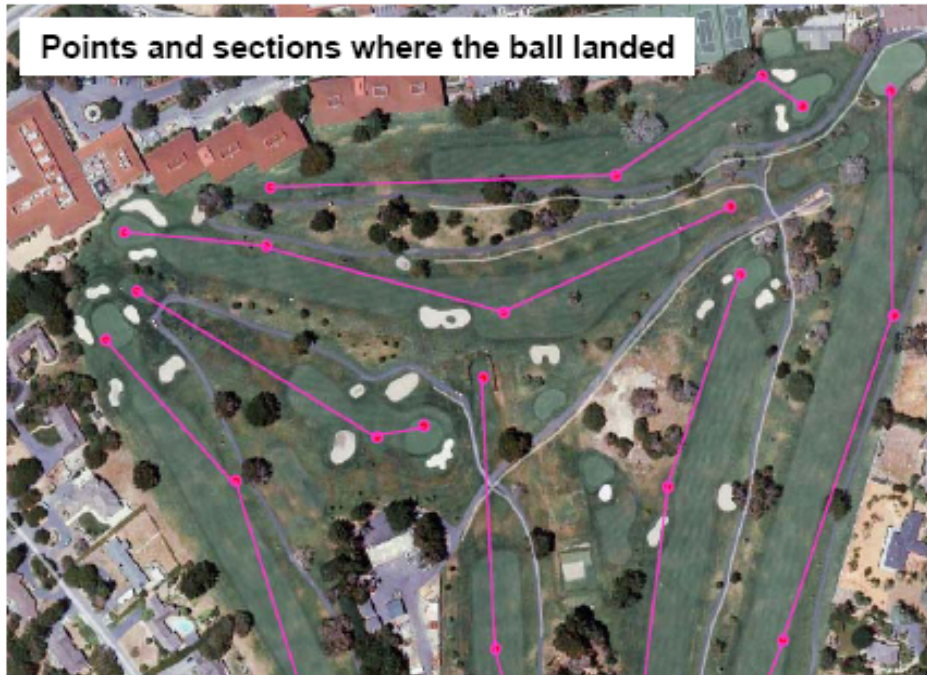


(1) To find/access files sync'd from Handheld, go to **C: Program Files / palmOne**, then go to folder of device that was sync'd – Treo680, Centro, etc.

- (2) How to upload up to four files:
- Click on **Browse**
 - Select one (and up to four) .TXT or .CSV files from a folder from your PC or laptop, tap on **Open**
 - Select the **Color** type for the plotted data
 - Select **Google Earth** or **Google Maps** output
 - Tap on **Make Map**

Applications – Display using Google Earth

For
Palm
Devices



Golf ball positions from tee to green



Location of traps for hunting or data collection

Applications – Display using Google Earth

For Palm Devices

- When displaying the GPS data, Google connects the points of data, thus drawing a line from point to point. See slide 21, the points are connected on golf fairway
- To display segments, such as in the golf application, or to display only the points, the user needs to modify the .CSV file by adding a "1" in the EL column in the targeted cell, which tells the program to connect the points up to this point and start a new sequence at the next point

"Latitude"	"Longitude"	"Altitude"	"Time"	"Notes"	"Record No"	
"37°26.4952' N"	"122°07.2173' W"	"25.91863521"	"6:53.00.000"	"Mom's House"	1	
"37°26.4951' N"	"122°07.2173' W"	"25.91863521"	"6:53.06.000"	"My School"	2	
"37°26.4951' N"	"122°07.2173' W"	"25.91863521"	"6:53.11.000"	"Gas Station"	3	
"37°26.4950' N"	"122°07.2173' W"	"25.91863521"	"6:53.16.000"	"Treasure"	4	

File will be displayed as one continuous line connecting Records No 1, 2, 3 and 4.

"Latitude"	"Longitude"	"Altitude"	"Time"	"Notes"	"Record No"	EL
"37°26.4952' N"	"122°07.2173' W"	"25.91863521"	"6:53.00.000"	"Mom's House"	1	
"37°26.4951' N"	"122°07.2173' W"	"25.91863521"	"6:53.06.000"	"My School"	2	1
"37°26.4951' N"	"122°07.2173' W"	"25.91863521"	"6:53.11.000"	"Gas Station"	3	
"37°26.4950' N"	"122°07.2173' W"	"25.91863521"	"6:53.16.000"	"Treasure"	4	1

File will be displayed with two line segments, Records No 1 and 2, and Records No 3 and 4.

"Latitude"	"Longitude"	"Altitude"	"Time"	"Notes"	"Record No"	EL
"37°26.4952' N"	"122°07.2173' W"	"25.91863521"	"6:53.00.000"	"Mom's House"	1	1
"37°26.4951' N"	"122°07.2173' W"	"25.91863521"	"6:53.06.000"	"My School"	2	1
"37°26.4951' N"	"122°07.2173' W"	"25.91863521"	"6:53.11.000"	"Gas Station"	3	1
"37°26.4950' N"	"122°07.2173' W"	"25.91863521"	"6:53.16.000"	"Treasure"	4	1

File will be displayed with four points Record No 1, Record No 2, Record No 3, and Record No 4.

**** Save file as a .CSV format, since you don't need the features of .XLS format**

Applications – Display using Google Earth

For Palm Devices

- Note on the .CSV file for Palm OS products
 - Because of the generic database format by Palm, the resulting .CSV file is “garbage” for their titles in **column A (UniqueID)** thru **column D (Category)**
 - The user needs to highlight these columns and delete them
 - An example follows:

A	B	C	D	"Latitude"	"Longitude"	"Altitude"	"Date"	"Time"	"Notes"	"RecordNo"
UniqueID	"Category"	"Dirty"	"Secret"	"Latitude"	"Longitude"	"Altitude"	"Date"	"Time"	"Notes"	"RecordNo"
12636190	0	"False"	"False"	"37\26.5144\N"	"122\07.2309\W"	"55.11811032"	"10/22/2009"	"15:13.53.000"	"Car"	1
12636191	0	"False"	"False"	"37\26.5123\N"	"122\07.2294\W"	"38.05774284"	"10/22/2009"	"15:14.29.000"	"Car2"	2
12636192	0	"False"	"False"	"37\24.1897\N"	"122\03.0349\W"	"42.32283471"	"10/22/2009"	"15:25.48.000"	"Bakery"	3
12636193	0	"False"	"False"	"37\23.5692\ N"	"122\02.5608\W"	"62.66404209"	"10/22/2009"	"15:29.12.000"	"Work"	4

Spreadsheet looks like this after deleting columns A thru D

"Latitude"	"Longitude"	"Altitude"	"Date"	"Time"	"Notes"	"RecordNo"
"37\26.5144\ N"	"122\07.2309\ W"	"55.11811032"	"10/22/2009"	"15:13.53.000"	"Car"	1
"37\26.5123\ N"	"122\07.2294\ W"	"38.05774284"	"10/22/2009"	"15:14.29.000"	"Car2"	2
"37\24.1897\ N"	"122\03.0349\ W"	"42.32283471"	"10/22/2009"	"15:25.48.000"	"Bakery"	3
"37\23.5692\ N"	"122\02.5608\ W"	"62.66404209"	"10/22/2009"	"15:29.12.000"	"Work"	4

**** Save file as a .XLS format to take advantage of Excel related functions**

About BT-GPS Device: i886 GPS



BT-GPS Features and Specs

FEATURES AND PERFORMANCE

- Low power consumption, up to 11 hours use with full charge
- Hot fix < 1.5 secs; Cold fix < 35 secs (open sky)
- Position accuracy: ≤ 2.5 m 2D-RMS
- Sensitivity: -165 dBm (tracking)
- 20+ satellite channels for fast acquisition and reacquisition
- WAAS and EGNOS enabled
- Supports NMEA-0183 V 3.01 data protocol
- Compatible with Bluetooth Serial Port Profile (SPP)
- Battery: built-in rechargeable lithium-ion
- Colored LEDs indicate device status

ADDITIONAL SPECIFICATIONS

- Baud rate supported: 4,800 and 38,400
- Receiver band: L1, 1575.42 MHz; C/A code: 1.023 MHz
- Velocity: 0.1m / sec
- Time: 0.1 microsecond, sync GPS time
- Altitude: max 18,000 m (60,000 feet)
- Reacquisition: < 0.1 sec, average
- Update rate: 1 Hz
- GPS antenna: built-in patch antenna
- Bluetooth™ 1.2, Class 2 operation (up to 10 meters range)
- Connector: mini-USB
- Dimension: 26 mm (W) x 44 mm (L) x 15 mm (H)
- Weight: < 18 g
- Operation temperature: -10 °C to + 60 °C
- Store temperature: -20 °C to + 60 °C

For Sales or Technical Inquiries
Contact: Sales@AptoLink.com