

## Quick Guide to NaviFilter

Before using NaviFilter, please make sure that you have logged the data together with your trip.

1. Turn on the data logger before starting the trip.
2. If any, take pictures.
3. Turn off the data logger after the trip.
4. Make sure the USB driver has been installed.
5. Use NaviFilter to review your trip.

### Overview

**NaviFilter is the tool that retrieves the logged data.**

1. Plug-in the USB data logger to a PC USB port.



2. Run the tool NaviFilter by double clicking its icon.
3. NaviFilter reads the data to PC automatically.

**NaviFilter is the tool that makes the trip report.**

The **Make Report** function expresses the retrieved data in various useful data formats for your easy reading.

1. plain text (xxx-report.txt)
2. NMEA (xxx-rmc.txt)
3. CSV (DATE-TIME-N.csv)
4. Excel (xxx-SpeedChart.xls) <sup>1</sup>
5. KML (trip-USER\_ID-DATE-TIME.kml) <sup>2</sup>

In addition, NaviFilter allows one to select a particular time period and generate reports only on that period.

**NaviFilter is the tool that integrates pictures with trip tracks shown to Google Earth.** <sup>3</sup>

It supports the most popular two picture formats:

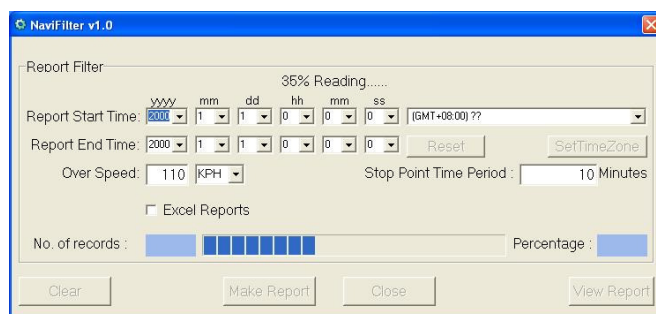
EXIF: Exchangeable Image File Format

JFIF: JPEG File Interchange Format

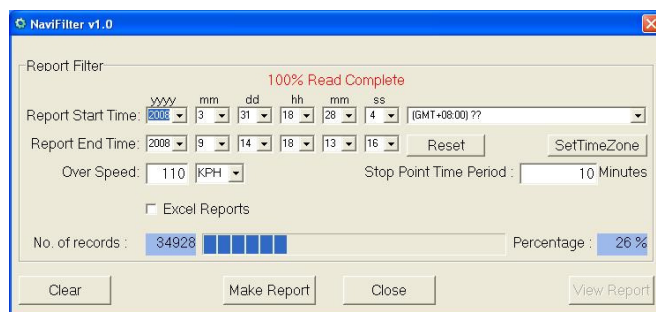
### Procedure for Making Reports

#### Make Report on Full Trip

1. Insert the data logger dongle to your PC's USB port and double click on the NaviFilter program icon.



2. It starts to read the logged data automatically as shown above. The reading progress is shown on the upper center position.
3. It updates the Report Start Time and Report End Time using the trip start and end time automatically as the logged data reading is done. It allows analysis of the trip by clicking appropriate function buttons as shown below.



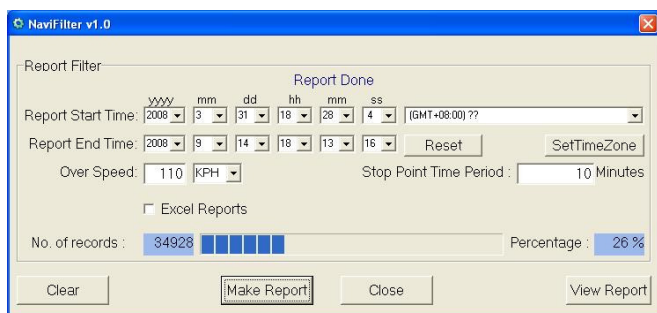
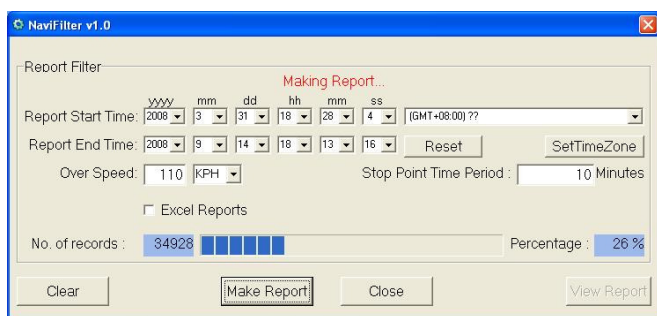
4. To generate reports of the full trip period, just click on **Make Report** button. It requests you to specify the directory for saving the reports.



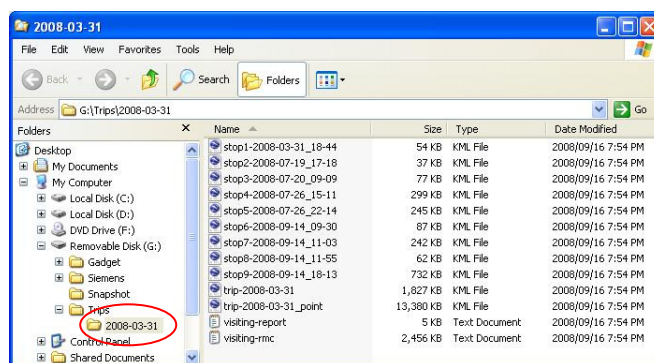
Choose saving directory and enter a name for this report (e.g. "visiting" here) and click on **Save** button.



5. It starts making reports and prompts **Making Report** at the upper center position. It prompts **Report Done** as the report making is done.



6. The **View Report** button becomes available as the report making is done. Click on it and it brings you to the directory that you specified for saving report. The report is stored under a new sub-directory using name composed of the report start date, e.g. 2008-03-31 here.

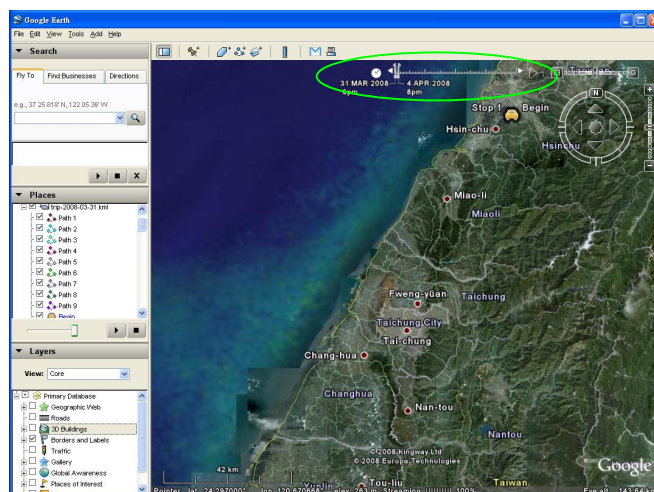


7. Reports in various data format are shown above.

- **Stop-N-YYYY-MM-DD\_HHMM.kml**<sup>2</sup> (where, N is a path number, YYYY = year, MM = month, DD = day, HH = hour, MM = minute) contains the path of the full trip. One can share the path information with friends. A path is divided by a stop point. The stop time shown here is 10 minutes. One can set it to their own preference to see more or less stop points and thus more or less paths.
- **Trip-YYYY-MM-DD.kml** contains the full trip. To view a *kml* file, just double click on the filename

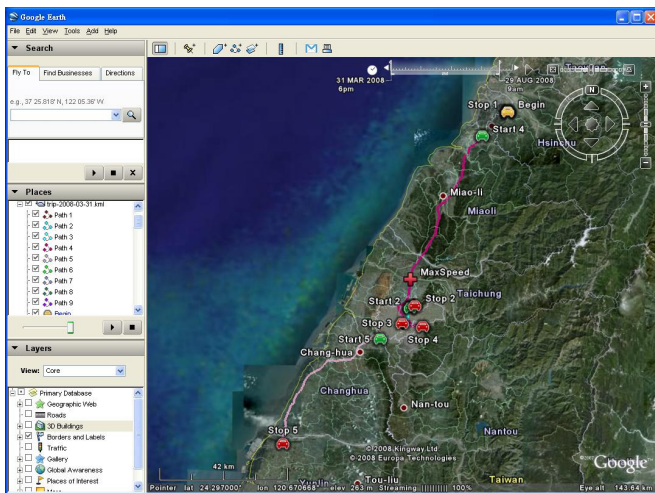


or open it from Google Earth.

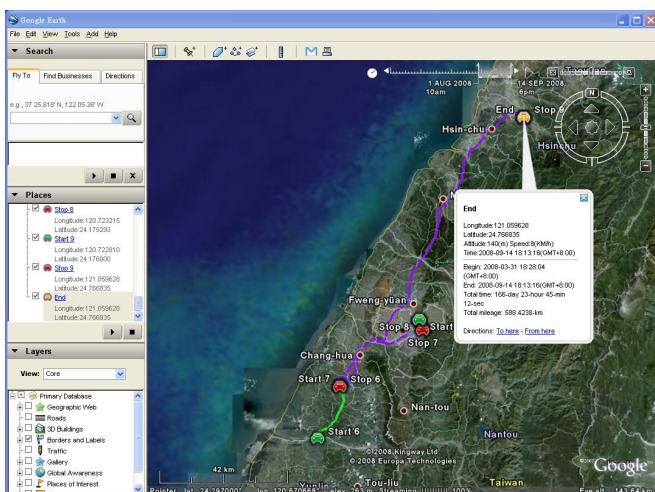


- It shows the *start/begin* points only. To see more trip information, adjust the time period bar (inside green oval shown above).

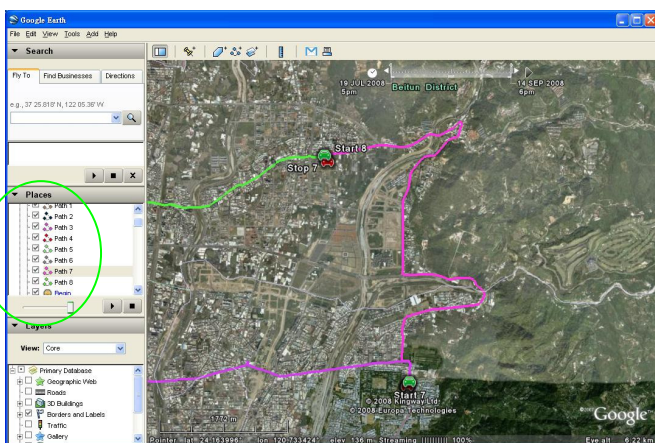




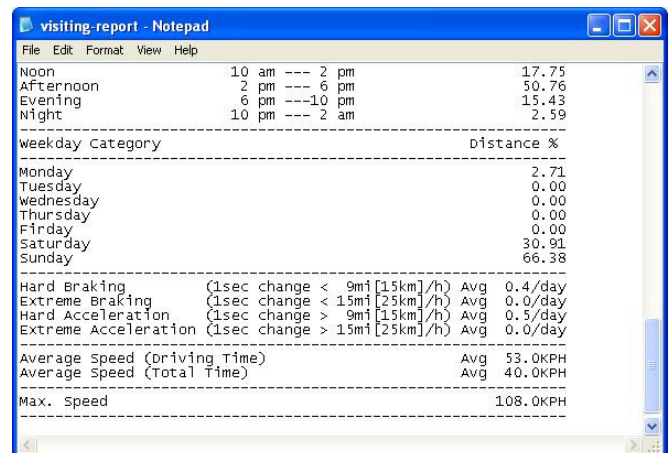
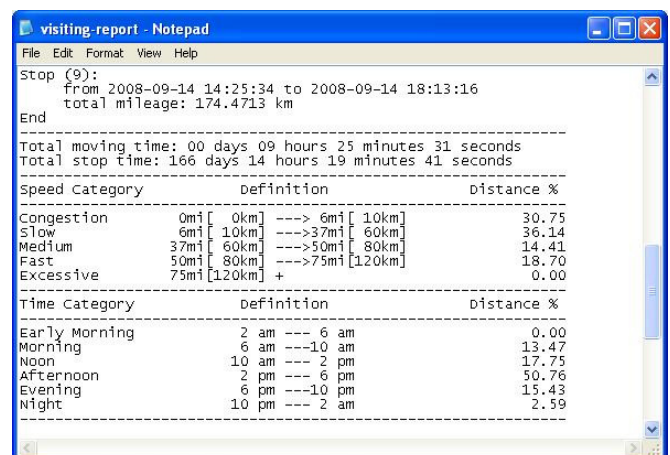
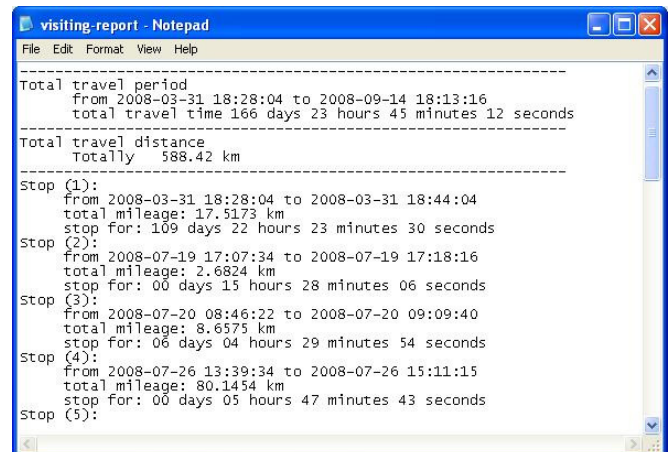
- Or adjust time bar to see specific time period. Click on any point of Start /Stop /Begin /End /MaxSpd /OverSpeed and it will show the corresponding detailed information.



- Click on the path (as shown in the circle of following picture) and it will show corresponding path.

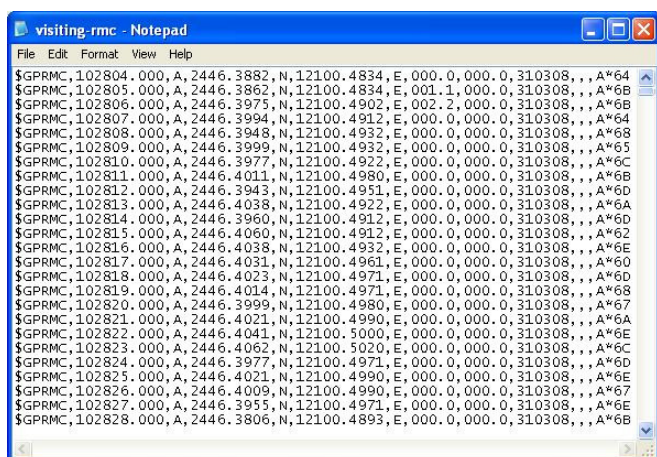


- NAME-report.txt** (e.g. “visiting-report.txt”) contains the full trip report in plain text as shown below.



It contains total trip time period, distance, individual stop points and path summary, percentage analysis in speed/time/weekday categories, braking and accelerations data.

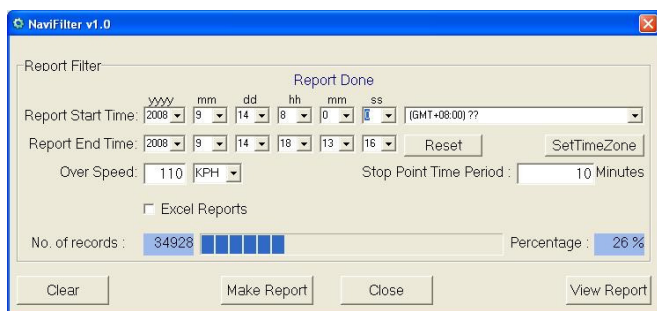
- NAME-rmc.txt** (e.g. “visiting-rmc.txt”) contains the full trip report in plain text (NMEA RMC sentence) as shown below.



This NMEA file could be used for “track making”/ “photo-tagging”/ “conversion between different mapping tools” and many other applications based on NMEA 0183 standard.

### Make Report on Partial Trip

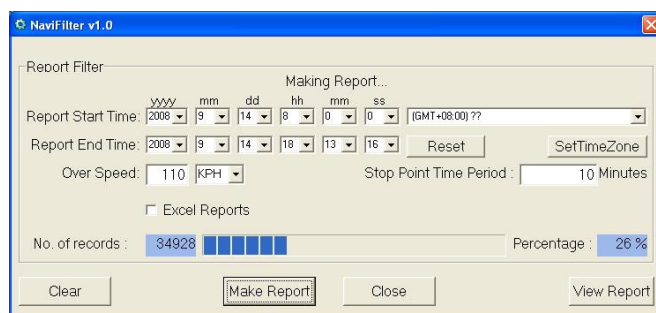
8. If only **partial** of the trip is interested, adjust the Report Start Time and Report End Time. E.g. only day Sep. 14 is interested in the example.



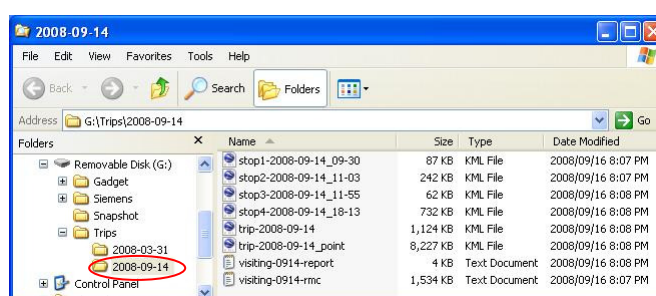
9. Click on **Make Report** and give a name.



10. Click on **Save** button and it starts making reports.

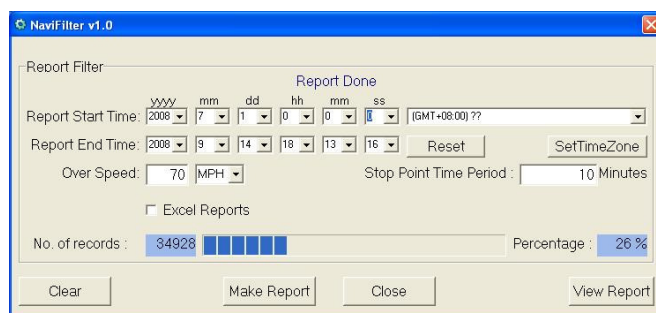


11. Click on **View Report** and you can see the new directory 2008-09-14 is created. The corresponding reports in various formats are stored in this directory.



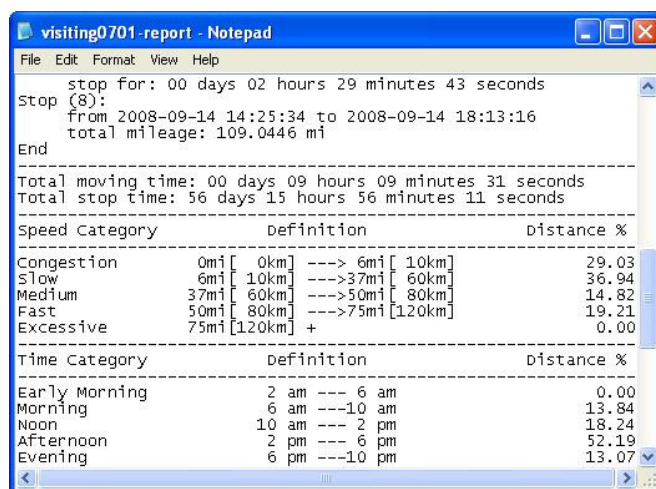
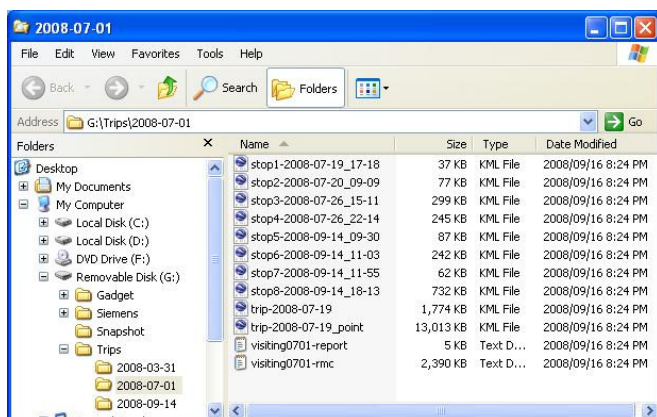
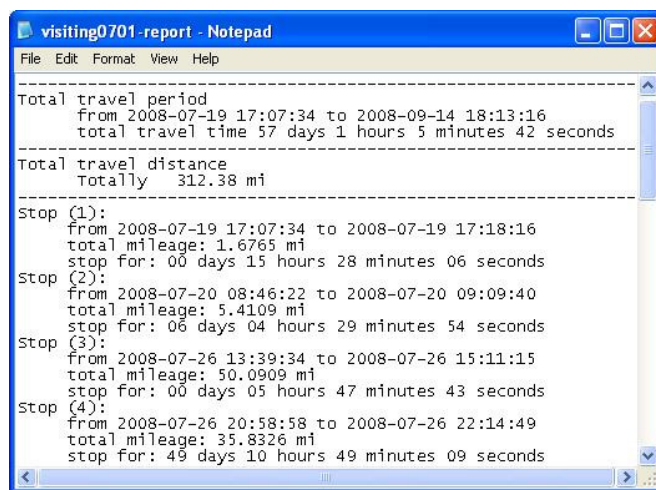
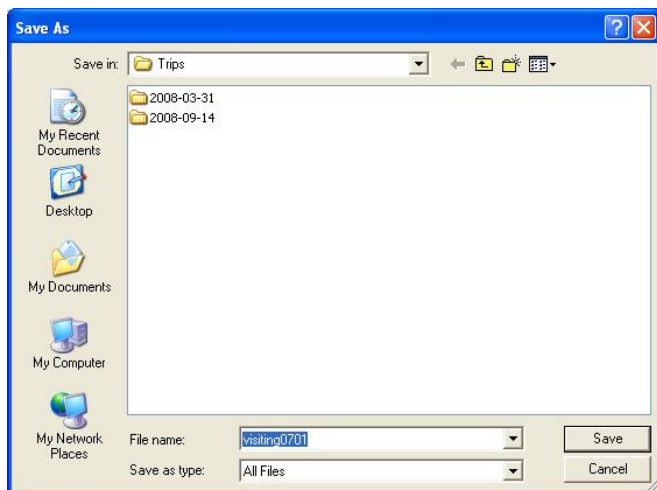
### Make Report with Different Unit System

12. Above examples use the Metric Unit System (meter, km, km/hr or KPH). If one uses Imperial Unit System (feet, mile, mi/hr or MPH), just change the unit in Over Speed setting to **MPH** is ok.



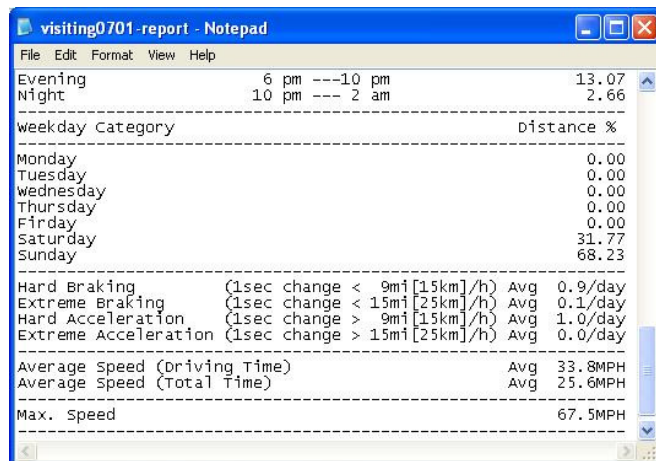
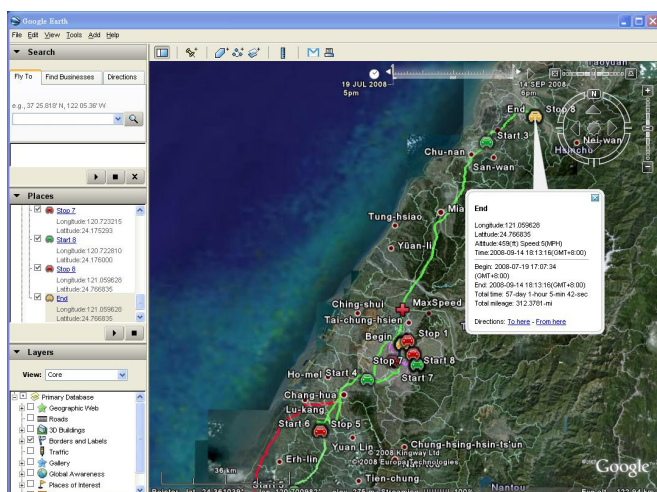
13. In above picture, a different time period (starting from July 1<sup>st</sup> to the end) is selected as another partial trip report example. Click on **Make Report** to generate corresponding reports in imperial unit system.





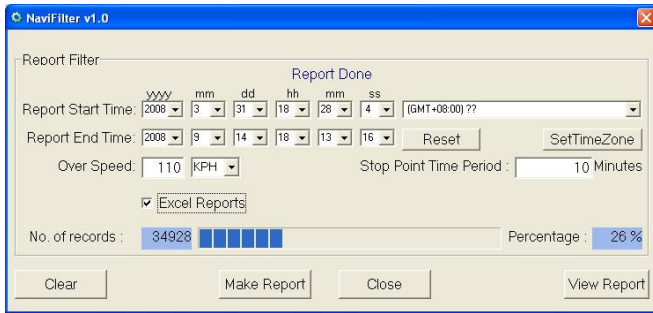
14. In above picture, a new directory 2008-07-01 is created to save the trip reports.

15. The corresponding reports are in imperial unit system as shown below.



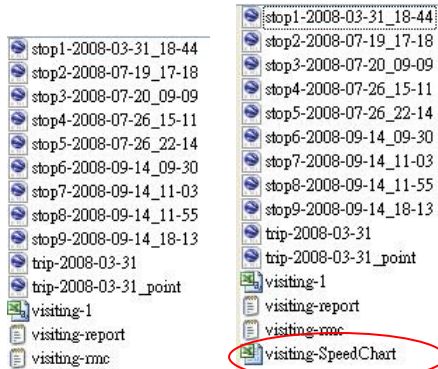
### Make Excel Reports <sup>1</sup>

16. Report in additional Excel format could be produced by click on the item Excel Reports.

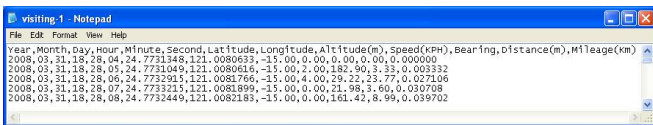


17. Click on **Make Report** to generate reports.

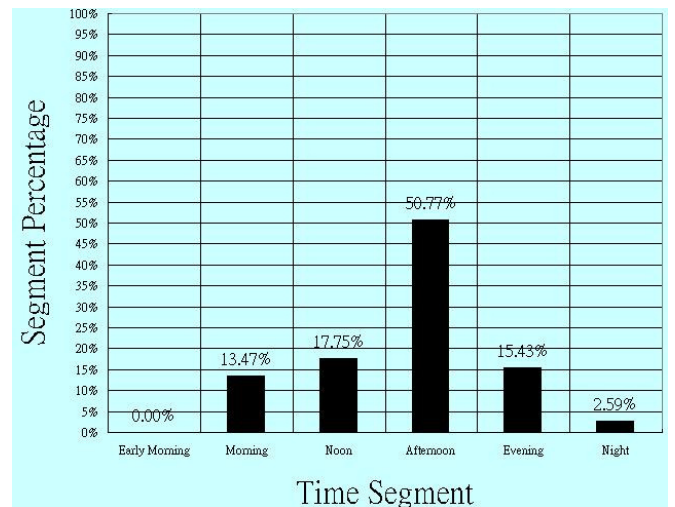
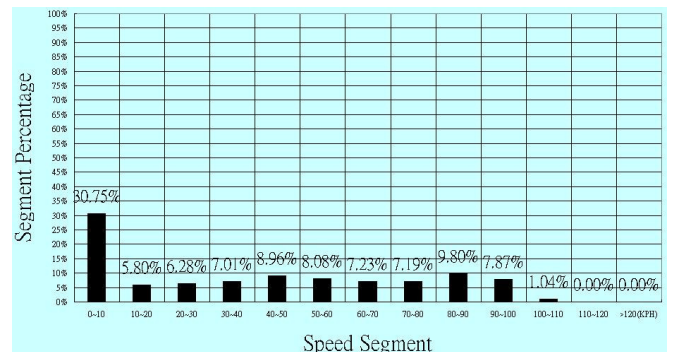
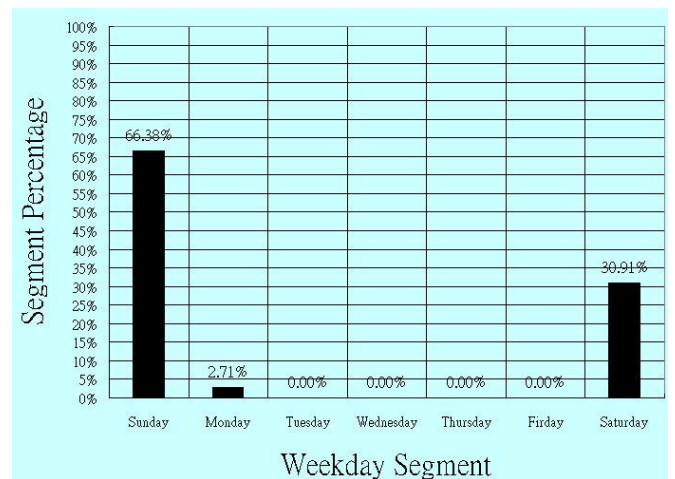
- If “Excel” is not installed, only CSV file is created (e.g. “visiting-1.csv” in following picture). If “Excel” is installed, another file *NAME-SpeedChart.xls* (e.g. “*visiting-SpeedChart.xls*”) is created as shown in following right.



- CSV file:** Each log point is expressed with one line in items of Year, Month, Day, Hour, Minute, Second, Latitude, Longitude, Altitude, Speed, Bearing, Distance, Mileage. It provides data for further professional analysis using Excel.



- SpeedChart** (Open with Excel): The speed chart includes three segments – weekday, speed and time. The weekday segment shows the distribution in the 7 days of a week. The speed segment shows the distribution at various speed ranges. The time segment shows the distribution of different time periods of a day.

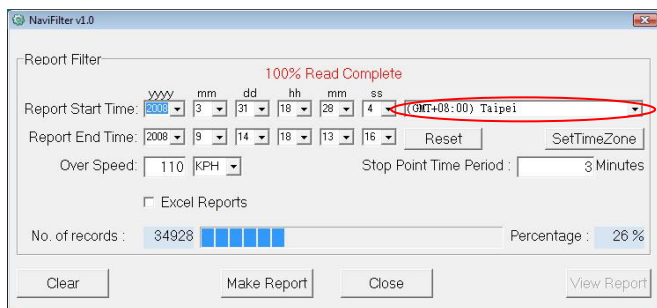


## Time Zone Adjustment

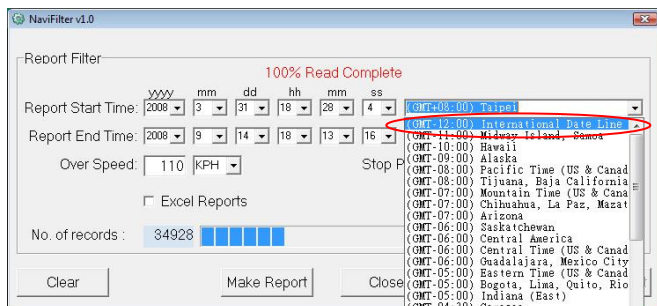
If you have an overseas trip, you may prefer to see the trip in time zone of that region. In this case, you can adjust time zone and use the **SetTimeZone** button to apply the change.

For example, the following picture shows the time zone of Taipei (GMT+8:00: Greenwich Mean Time + 8 hours).

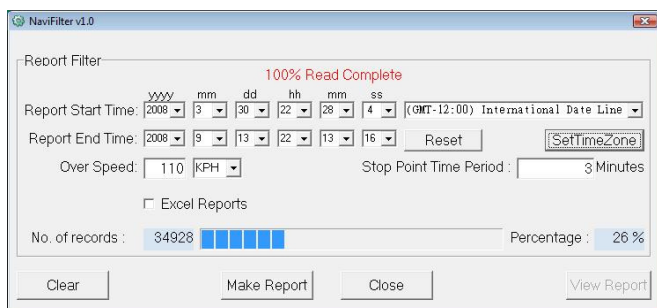
## Trip Reporter



One can choose another time zone, say GMT-12:00.



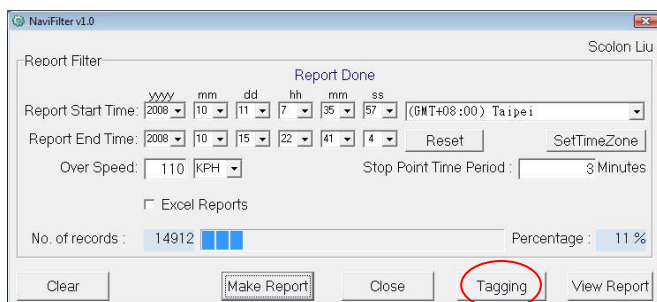
Click on button SetTimeZone to apply the new time zone. Please note that the Report Start Time and Report End Time are changed accordingly.



## Make Photo Path

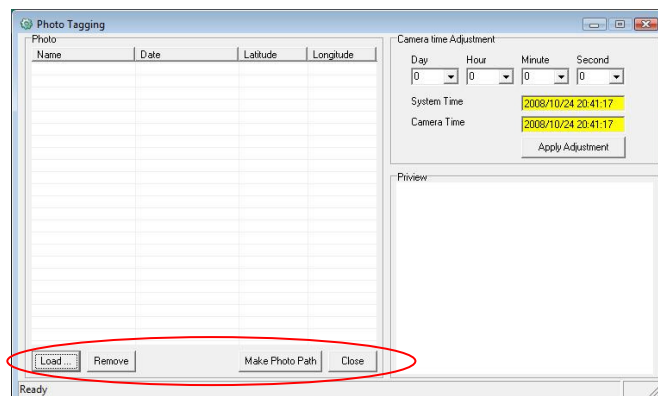
This is a newly added feature. It allows one to view the visited places together with pictures taken in the trip.

Click on button Tagging

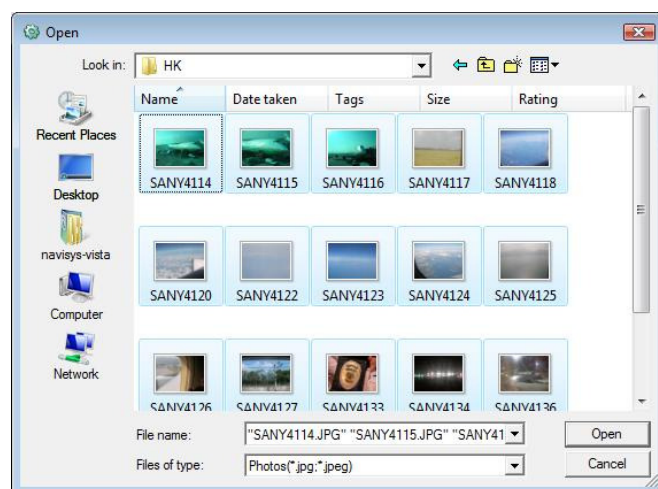


## Quick Guide to NaviFilter for BT-GPS Data Logger

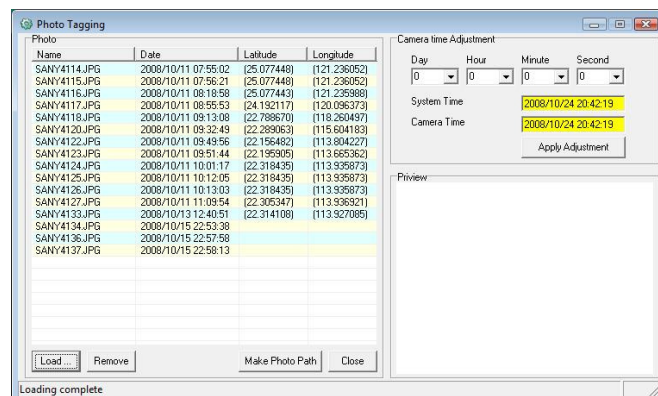
A new window as shown below allows one to Load pictures, Remove pictures, Make Photo Path, or Close this window.



Click on button Load. In the window shown below, move to the picture directory, select the trip pictures.



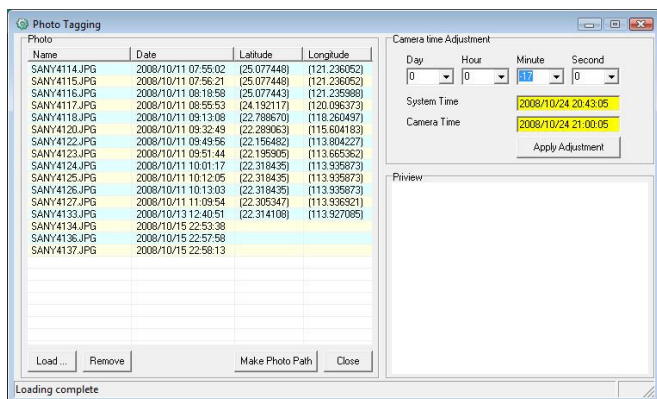
Click on button Open to load the selected pictures.



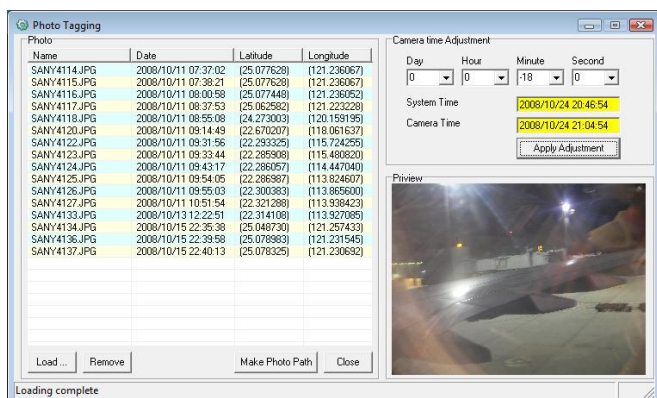


## Trip Reporter

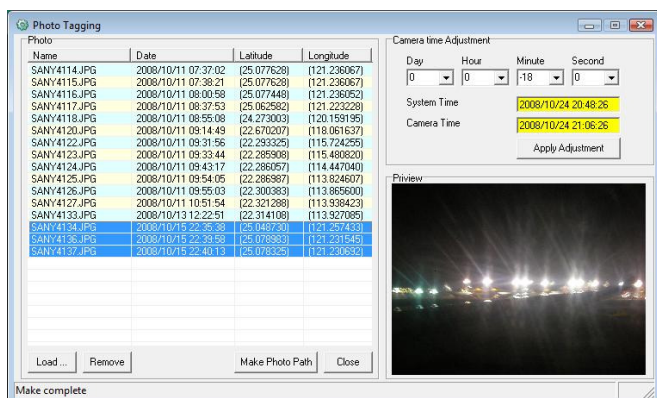
After the pictures are loaded, the corresponding latitude and longitude data are also loaded according to the log data. If the camera time is different from the computer time, one can adjust the time difference. In following picture, 17 minutes should be subtracted from Camera time to meet the System Time (shown as -17 Minute).



In following picture, -18 Minute is selected. Click on button Apply Adjustment to adjust pictures as following:

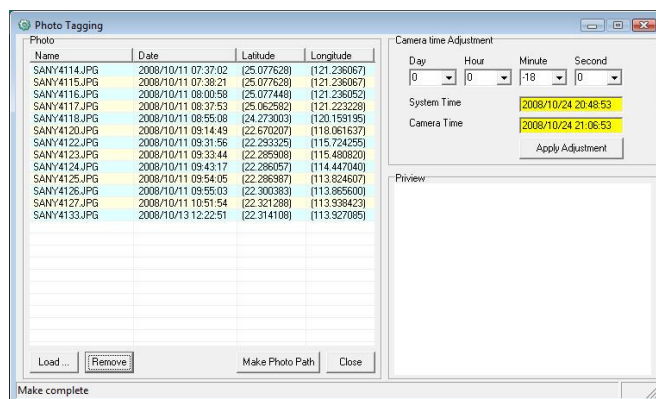


If one does not want to show some pictures in the trip,

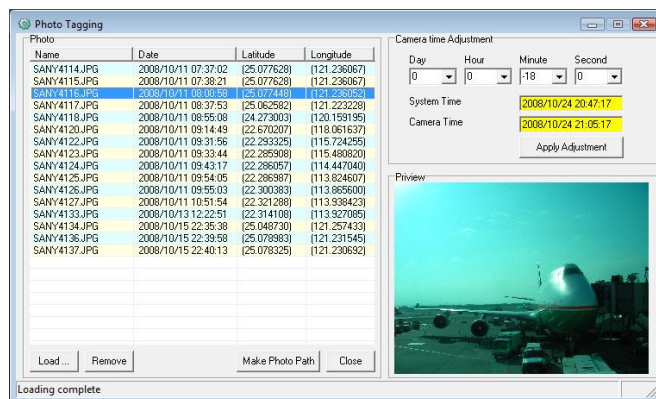


## Quick Guide to NaviFilter for BT-GPS Data Logger

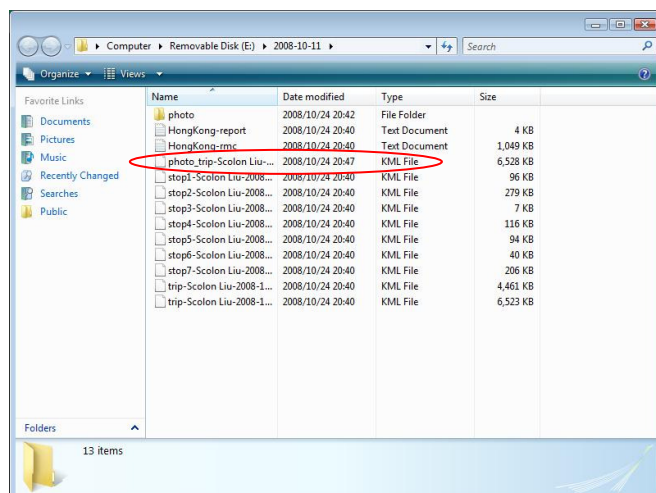
select the pictures and then click on button Remove



One can use the previously described load function to load those removed pictures again. Clicking on any file will preview the corresponding picture.

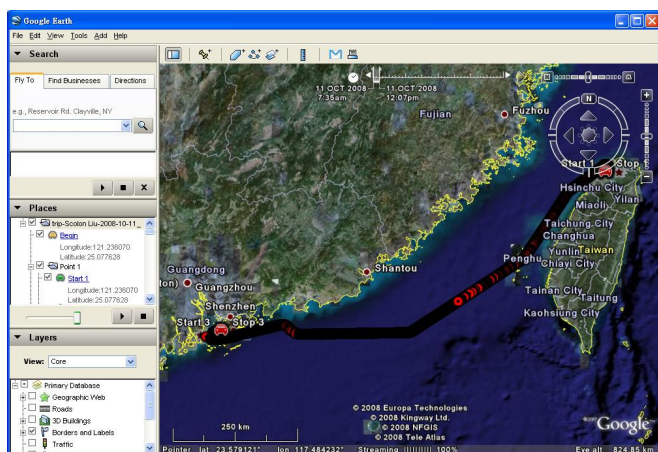


Click on button Make Photo Path to generate the trip file photo\_trip\_IDxxxx.kml.

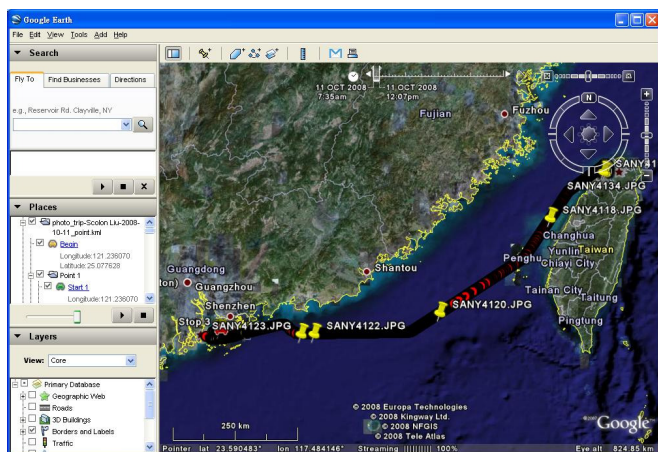




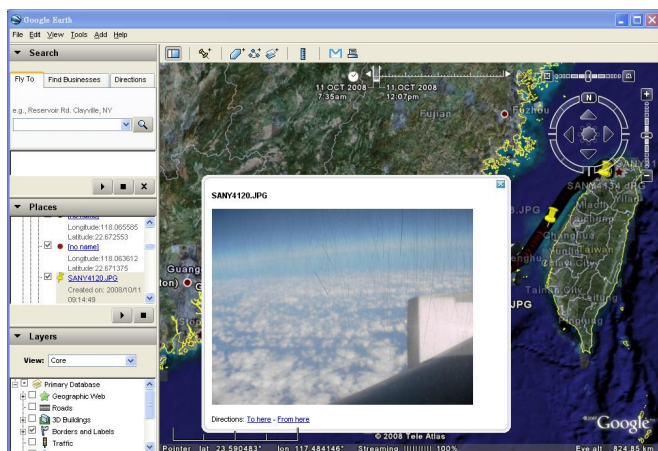
A trip report file does not include pictures.



The photo trip report file includes pictures shown by tacks.



Click on any tack to view the corresponding pictures at the visited location.

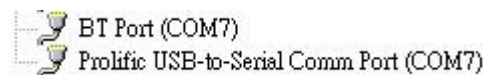


## Trouble Shooting

1. Connection problem – COM port conflict



The USB device shares the same communication port with other devices, e.g. Bluetooth, in the example as shown below.



To solve this problem, please use other USB port that does not share with other devices.

2. Connection problem – communication error



- a. The USB driver for the data logger is not installed. The accompanying CD-ROM includes the driver.
- b. Another software tool is using the USB port. To solve this problem, please close the communication port used by the other application or just simply close the other application.
- c. In rare cases, the communication with PC maybe not stable and thus have this error. In that case, just unplug, re-plug it to the USB port and run the tool again.

### Notes:

1. Excel is one tool of Microsoft Windows Office.
2. kml is the data format used by Google Earth. Google Earth could be free downloaded from web page <http://earth.google.com/>
3. The maximum number of pictures supported in a trip is 1000.

\*We try to make the report simple and easy. Comments are always welcome.

\*This document is subject to change without notice.