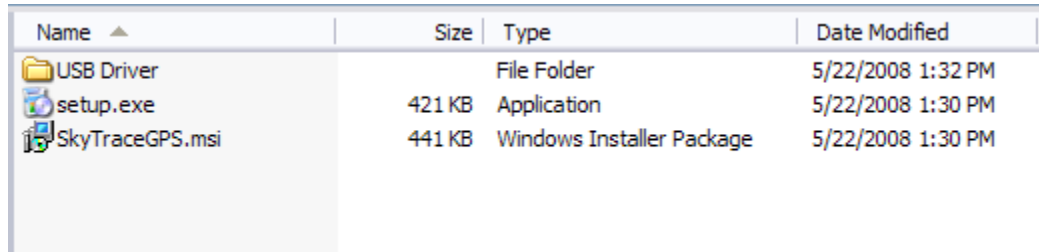


SkyTraceGPS Users Guide

USB driver installation – Do This First

Make sure the SkyTraceGPS is NOT connected to the computer.

The contents of the disk or downloaded .zip file should look like Figure 1.



| Name | Size | Type | Date Modified |
|-----------------|--------|---------------------------|-------------------|
| USB Driver | | File Folder | 5/22/2008 1:32 PM |
| setup.exe | 421 KB | Application | 5/22/2008 1:30 PM |
| SkyTraceGPS.msi | 441 KB | Windows Installer Package | 5/22/2008 1:30 PM |

Figure 1

Open the USB Driver folder, then open either the Windows folder (for all versions except Vista) or the Windows_Vista Folder. Run the program in the folder and accept all the defaults. You'll need to restart the computer.

Now connect the SkyTraceGPS to the computer with a USB cable. You should see something like Figure 2 but without the error. I got an error because the USB driver was already installed on this computer.

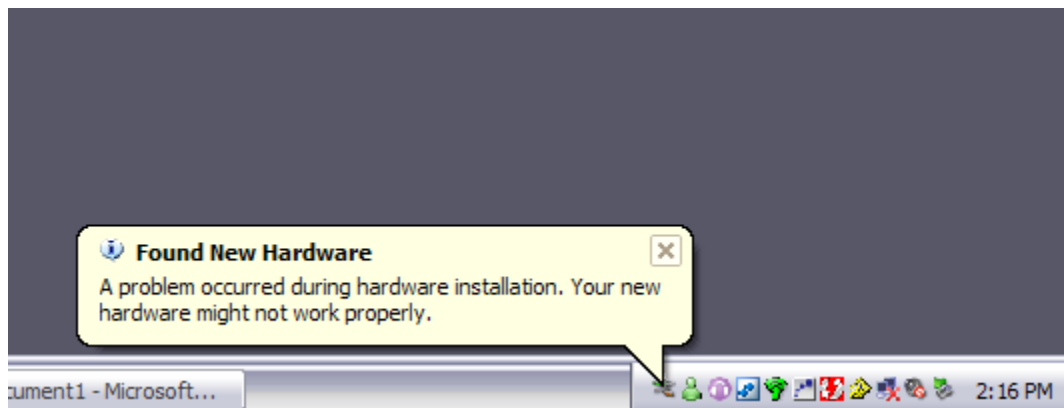


Figure 2

You will need to determine which comm port the USB driver is using. You can either guess when you try to run the SkyTraceGPS software, or you can look at Start/Control Panel/System/Hardware/Device Manager/Ports. You'll see a screen like Figure 3.

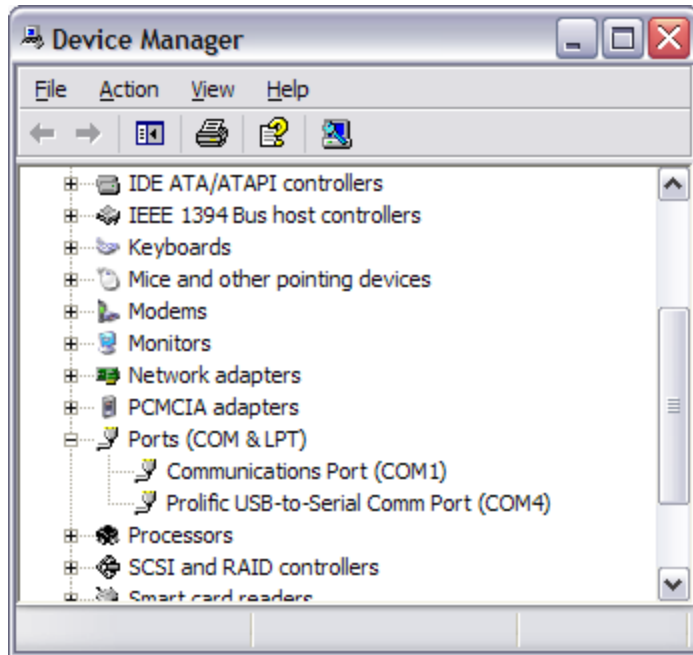


Figure 3

On my computer the USB Serial port is COM4.

SkyTraceGPS Windows software installation

The contents of the disk or downloaded .zip file should look like Figure 4.

| Name | Size | Type | Date Modified |
|-----------------|--------|---------------------------|-------------------|
| USB Driver | | File Folder | 5/22/2008 1:32 PM |
| setup.exe | 421 KB | Application | 5/22/2008 1:30 PM |
| SkyTraceGPS.msi | 441 KB | Windows Installer Package | 5/22/2008 1:30 PM |

Figure 4

Run setup.exe

Accept all the defaults but click on "Everyone" in this screen, Figure 5.

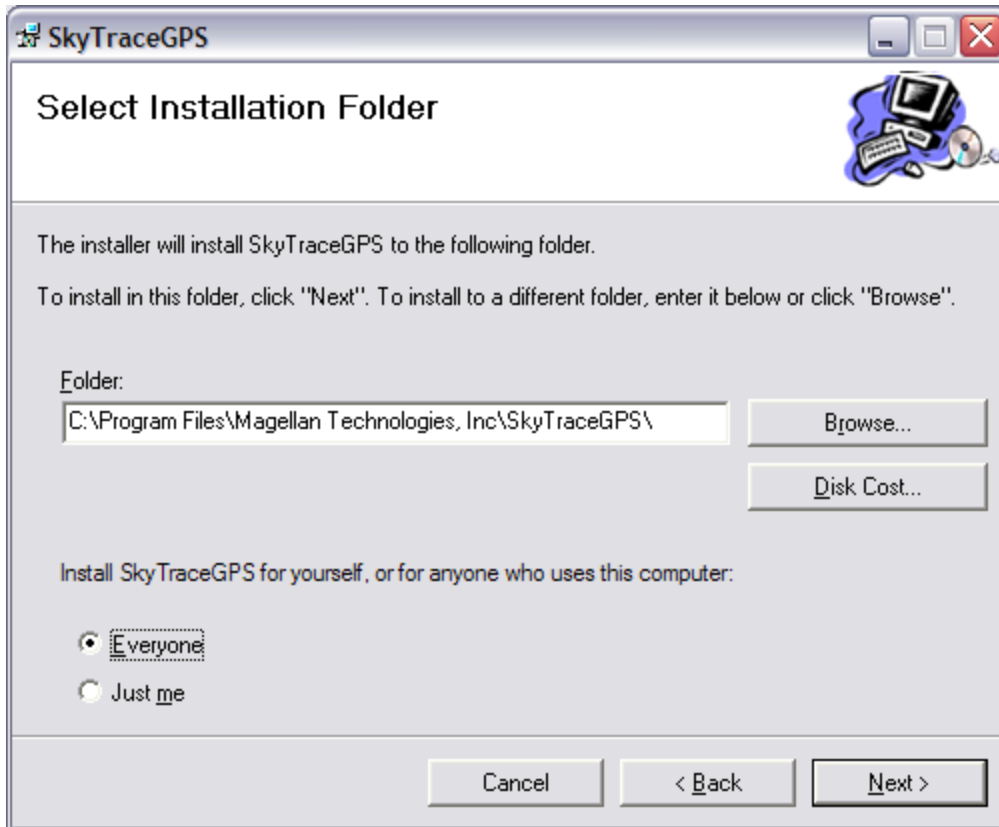


Figure 5

You may be required to install Microsoft .NET Framework 2.0 from Microsoft. This is the set of libraries that Visual Studio 2005 C# (the language used to develop the program) needs to run the program.

Finally you'll see this screen, Figure 6

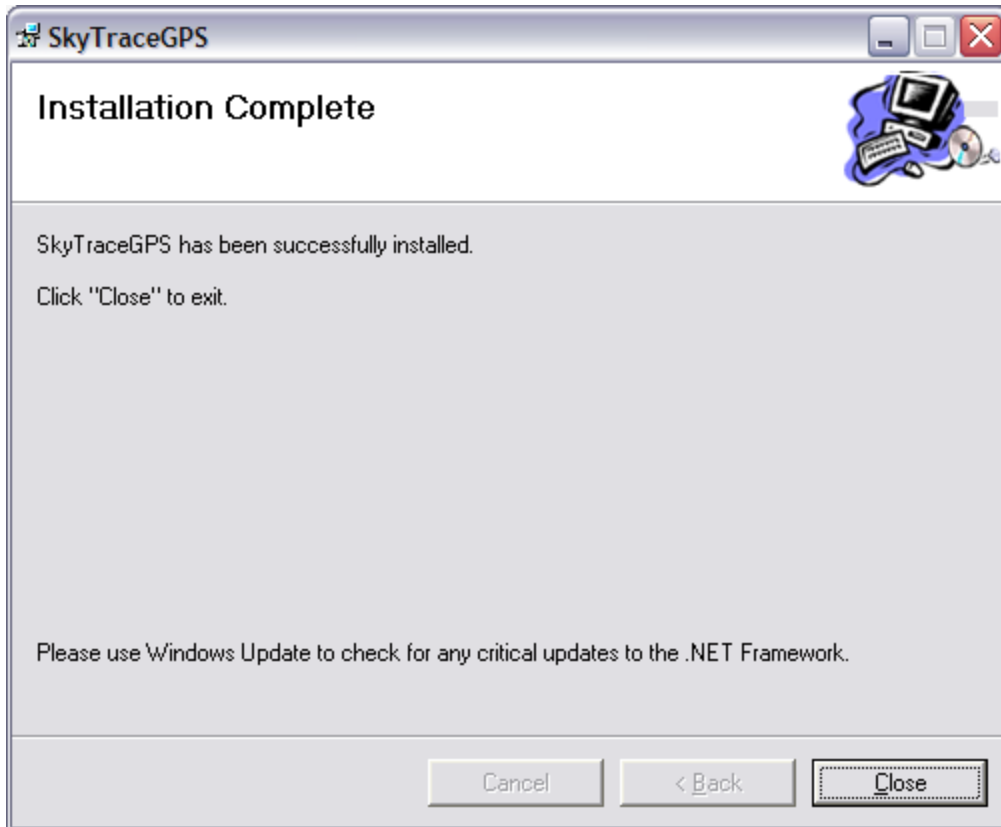


Figure 6

SkyTraceGPS Windows Software Operation

To run the SkyTraceGPS program, go to Start/All Programs/SkyTraceGPS . You'll see the screen in Figure 7.

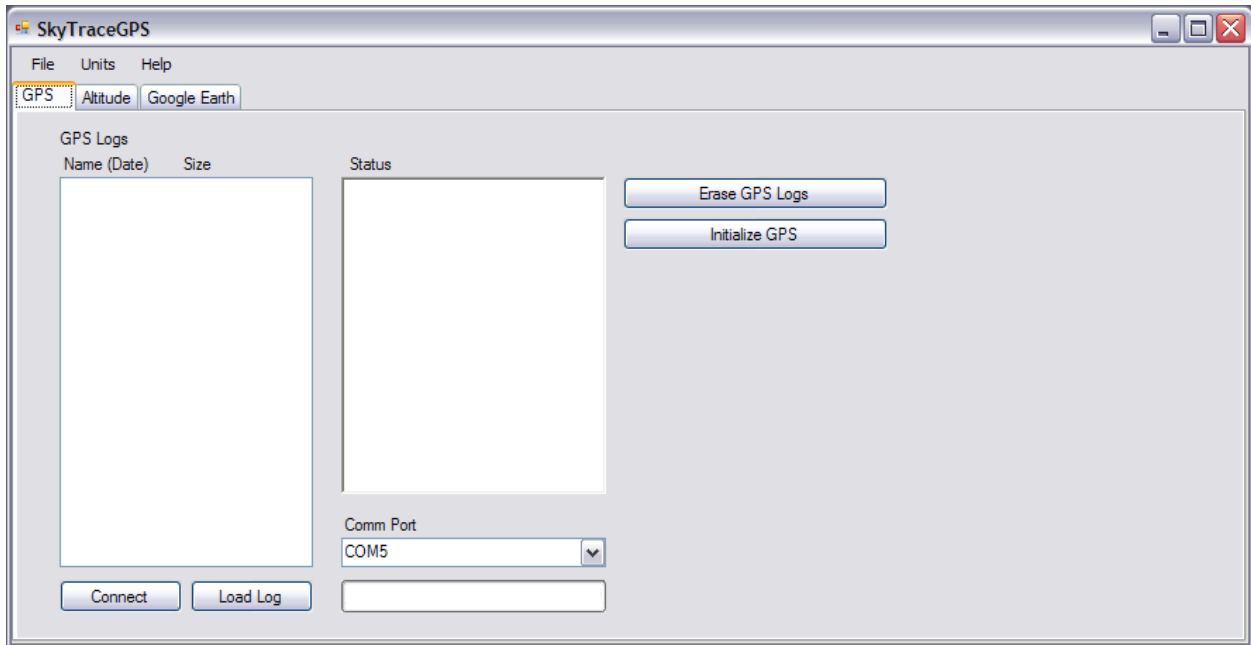


Figure 7

Before you can download data from the SkyTraceGPS, you must have a registration code. Click on help, then Generate Reg ID. Email this to magtechinc@yahoo.com. You will receive a code back that should be entered in the help/Reg Code screen. The Reg Code is only good for one computer, but within reason you can have as many as you need.

Connect the SkyTraceGPS to the computer using a USB cable.

Select the Comm Port (yours will not necessarily be COM5).

Click on the Connect button. You should get a list of the logs in the SkyTraceGPS as seen in Figure 8.

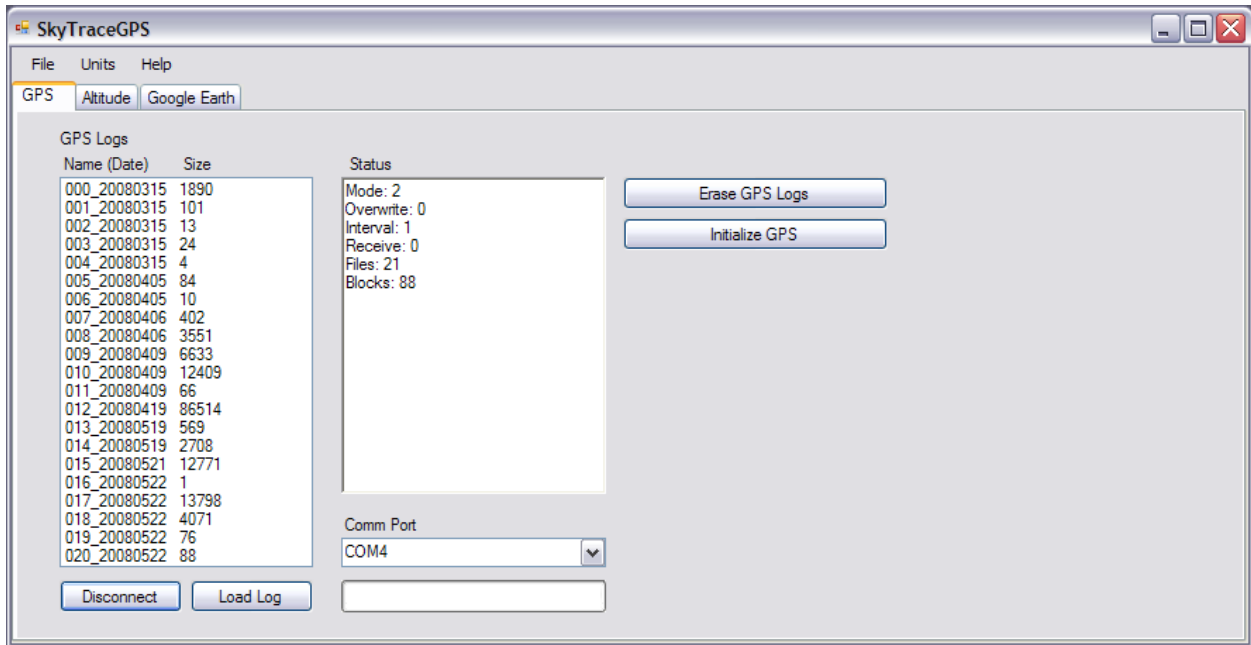


Figure 8

The logs are named XXX_YYYYYYYY where XXX is a sequence number and YYYYYYYY is the date the log was recorded. Select a log file, then click on Load Log. Depending on how long the log is it can take a while to download.

From this tab you can also clear all the logs from the SkyTraceGPS memory and reset all configuration values to factory default.

Go to the Altitude tab. You'll see a screen like Figure 9.

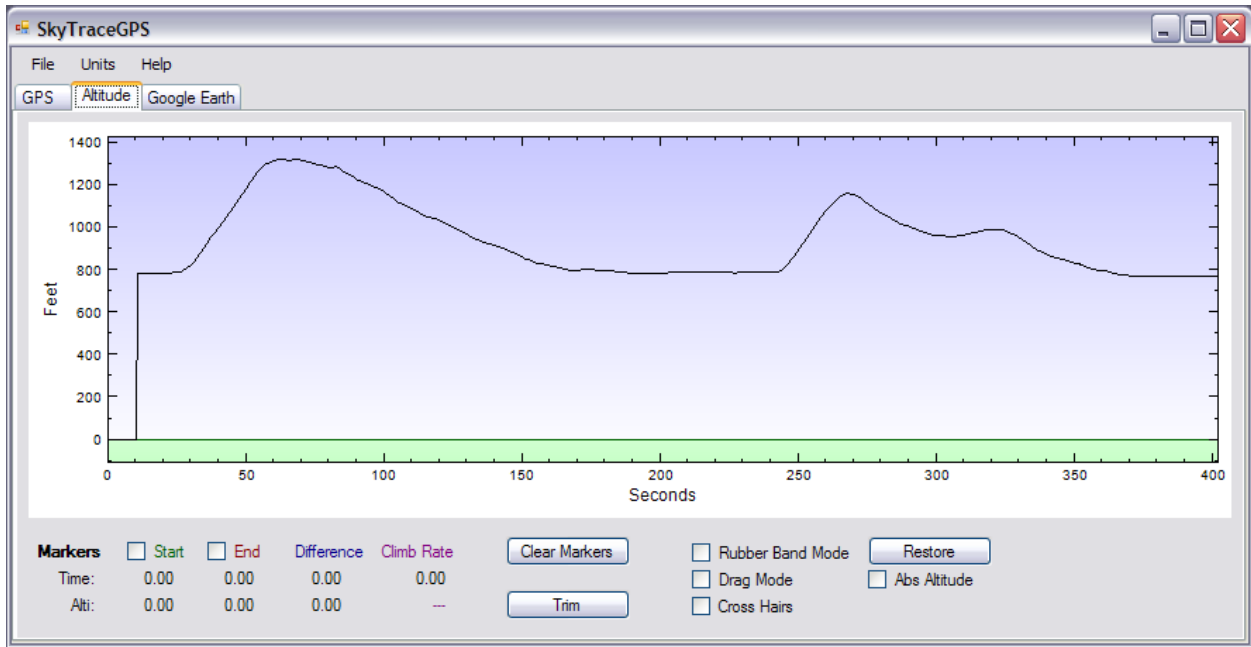


Figure 9

The first few second of the log are not valid because the SkyTraceGPS was establishing a fix. To correct this in the log, click the Start box then click on the graph just to the right of where the good data starts. See Figure 10

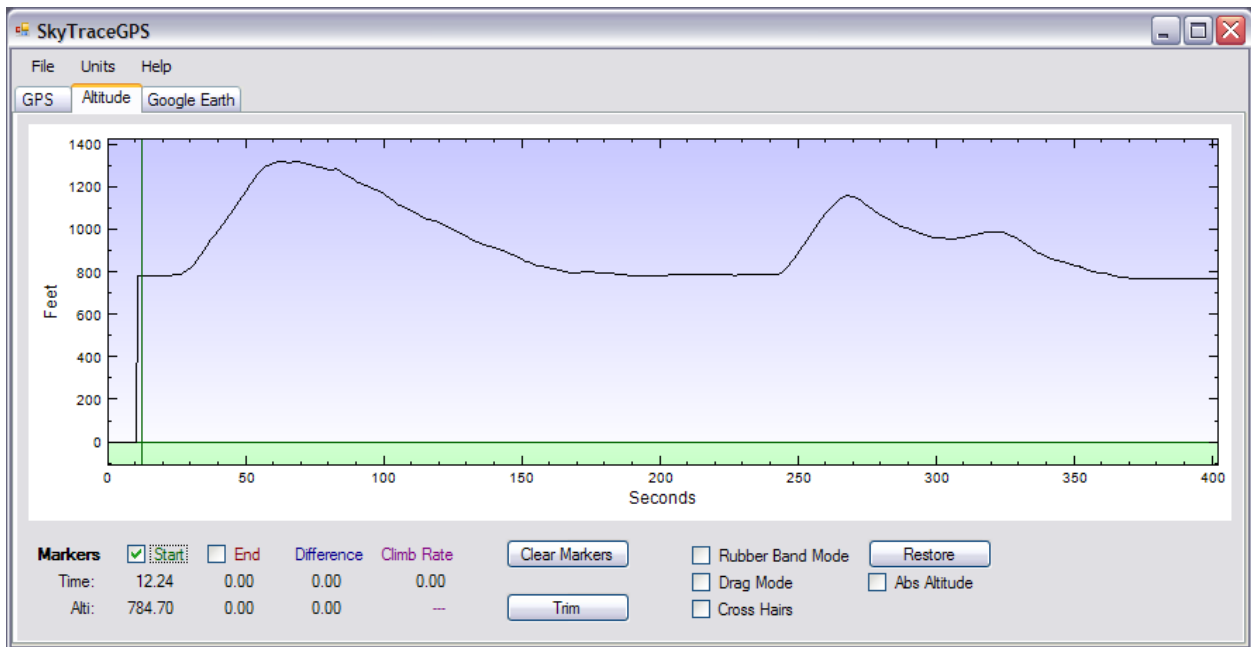


Figure 10

Then click Trim. All data to the left of the Start marker will be deleted (only in program memory, the SkyTraceGPS retains the original log file).

Click the Abs Altitude box a couple of times to get the screen shown in Figure 11.

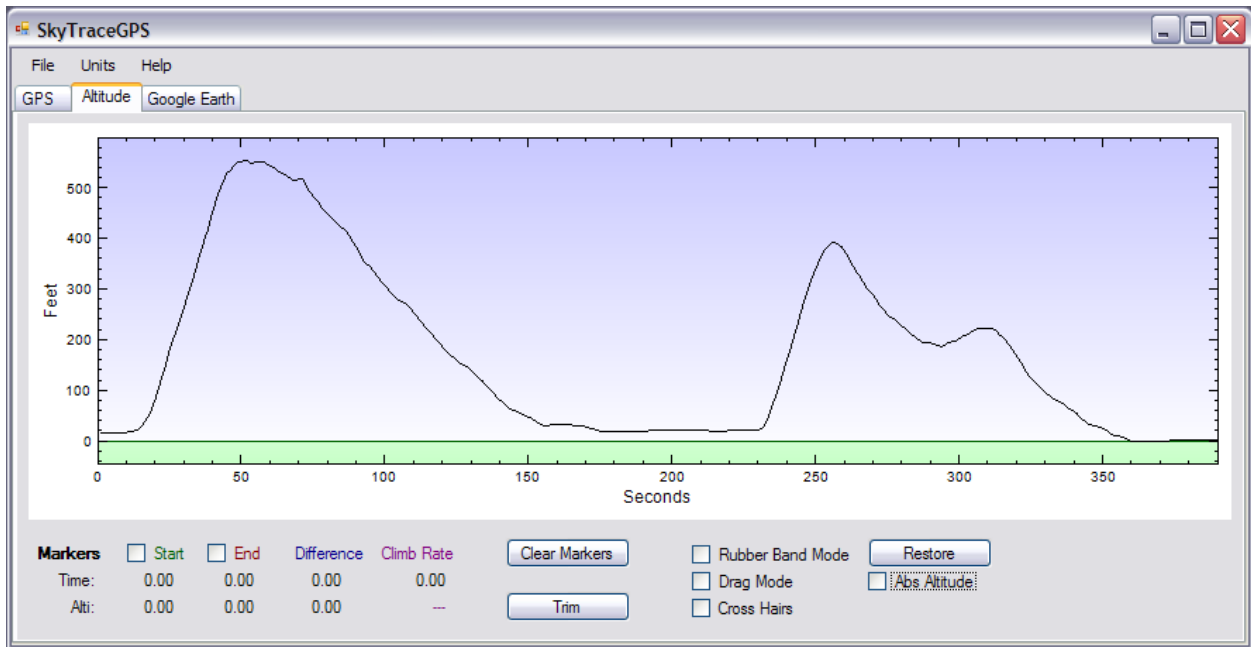


Figure 11

To measure, for example, climb rate. Click on the Start box, click on the graph at the start of the section you want to measure. Click on End, click on the graph at the end of the section you want to measure. See Figure 12

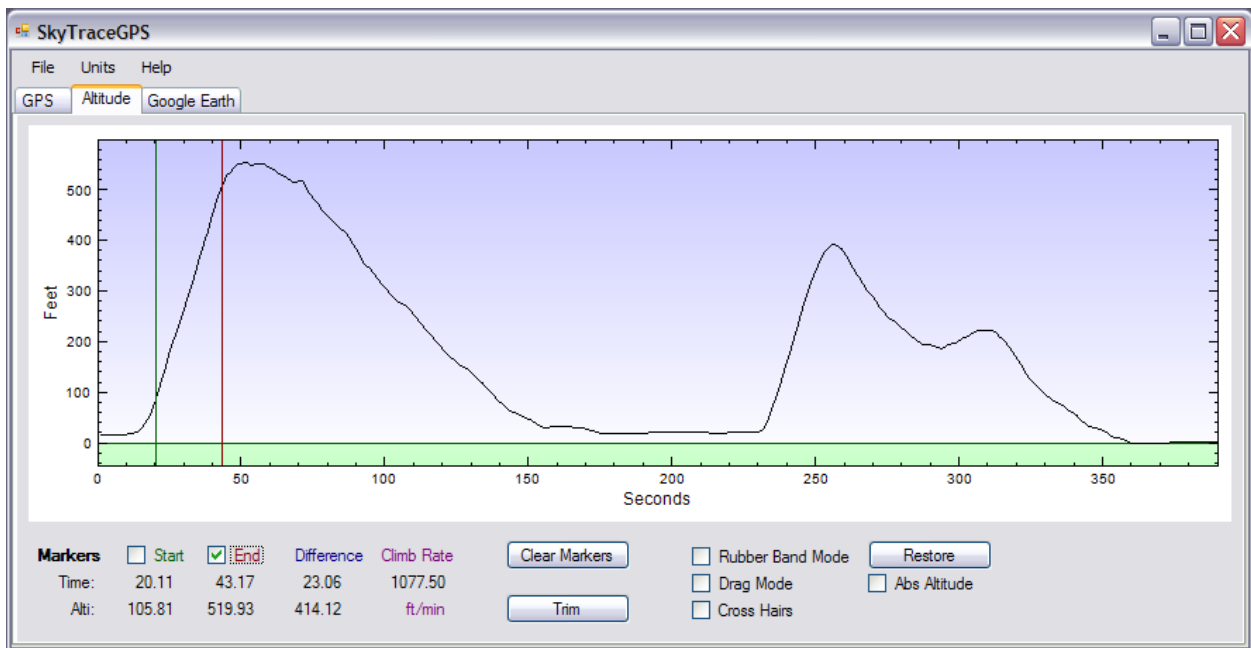


Figure 12

You can see the climb rate was 1077 ft/min. The time difference and altitude difference is also shown.

This log is actually two flights. To extract the first flight click on the Start box, select the start of the flight. Select the End box and select the end of the first flight. See Figure 13.

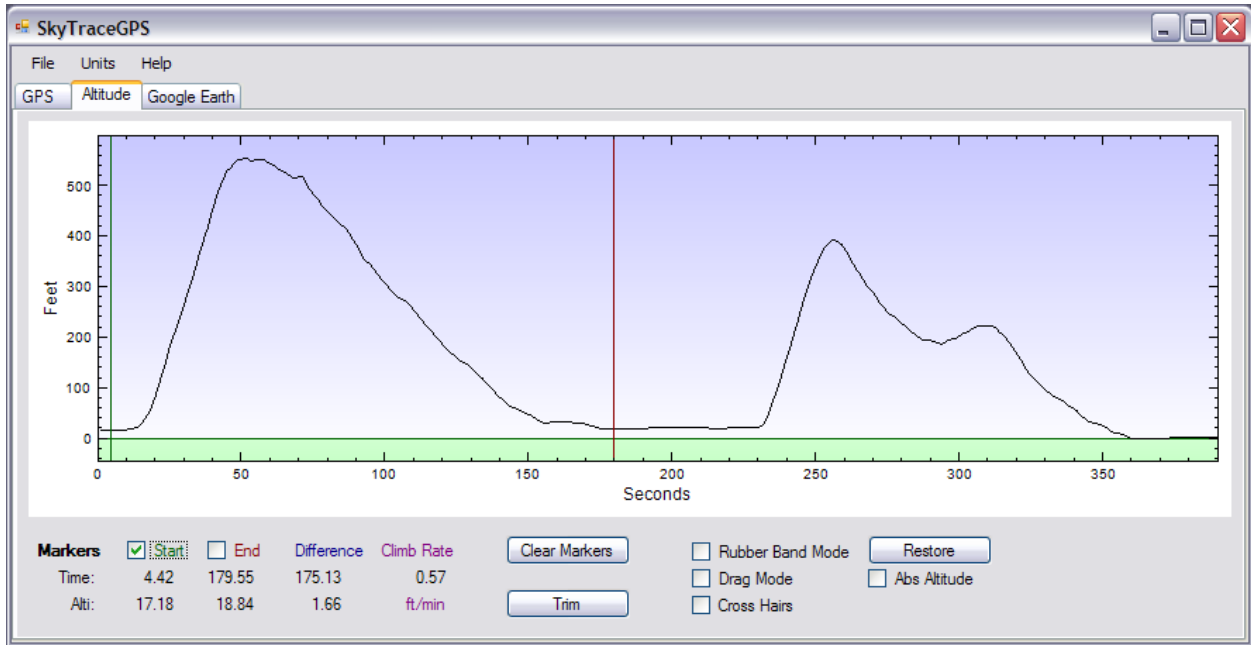


Figure 13

Now click Trim. You should get a screen like Figure 14.

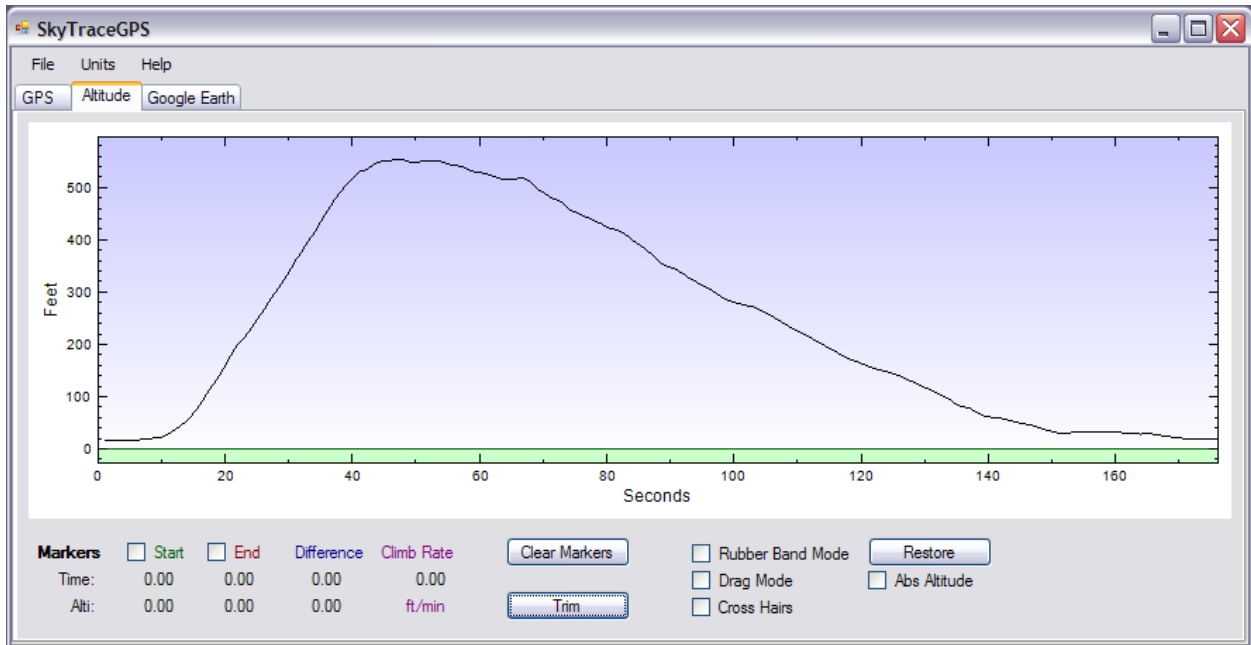


Figure 14

To zoom in without extracting the data, click on the Rubber Band Mode box and select the area you want to zoom in on by holding the left mouse button while dragging across the area you want. Something like Figure 15.

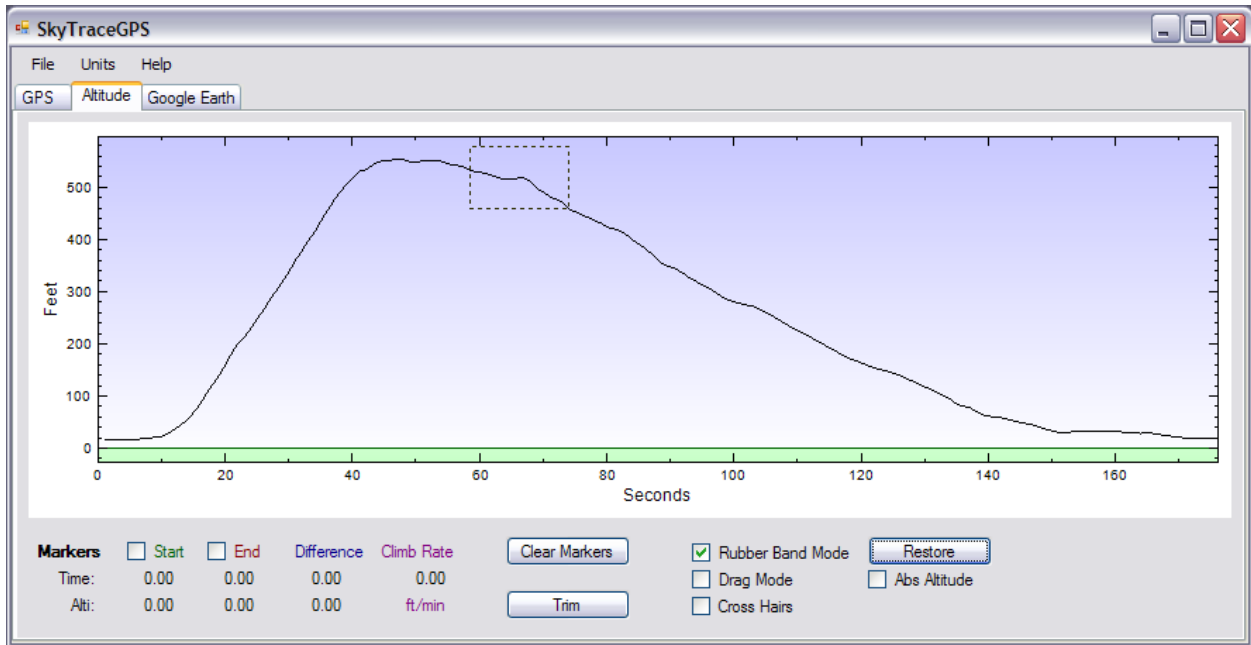


Figure 15

When you release the mouse button, you get a zoomed in view like Figure 16.

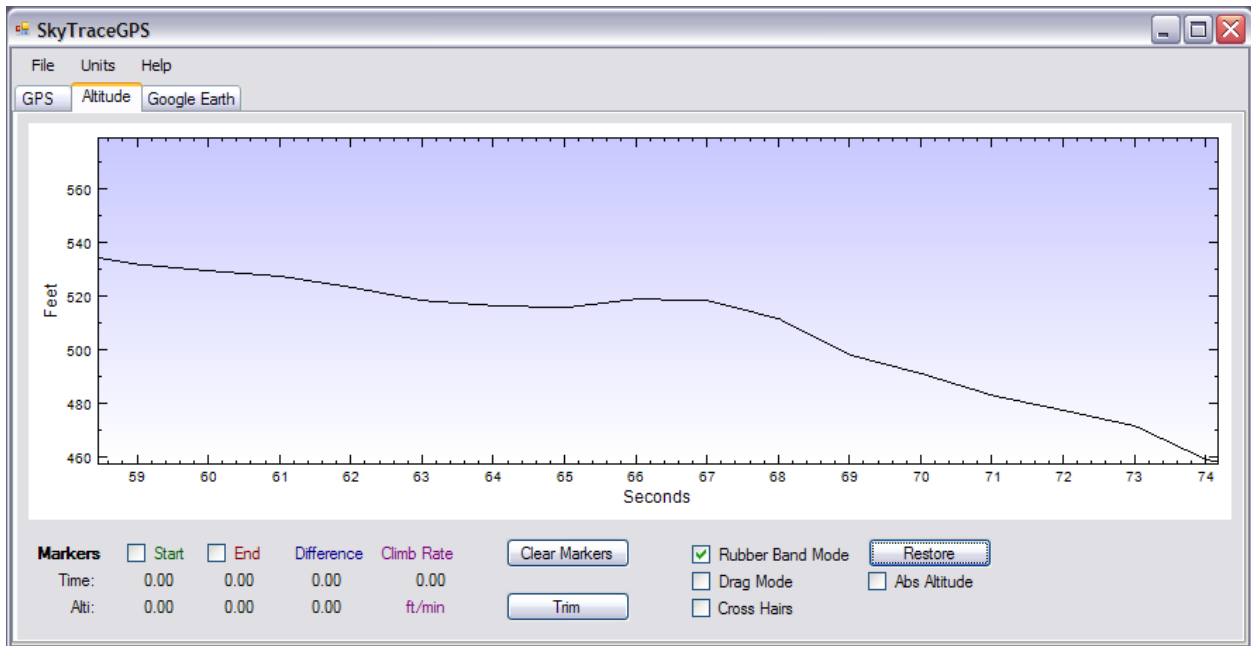


Figure 16

Click Restore to go back to the original view.

Google Earth Functions

You must have the latest version of Google Earth installed and have a high speed Internet connection.

Click on Google Earth to open Google Earth and load the flight log. This may take a while. You should see the trace in red on Google Earth.

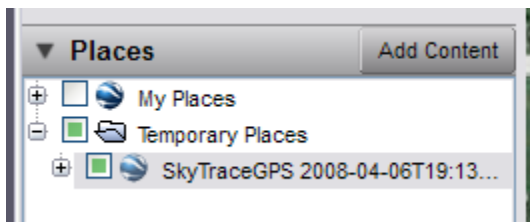
Alternatively, you can click Create KML file and open the file later in Google Earth.

On the Google Earth tab you find a Ground Altitude Box. The SkyTraceGPS log altitude above sea level that may be off slightly from Google Earth Ground altitude. This may result in your flight being partially underground or starting with an altitude of say, 100 feet. Google Earth displays the ground altitude of the cursor. Enter this altitude in the box and click on the Google Earth button gain to view the adjusted trace. This may take some trial and error.

You can change units from Imperial to Metric – this may be a little flaky on the Beta version, we'll see.

You can save and load logs to your computer. They have the extension “.stg”.

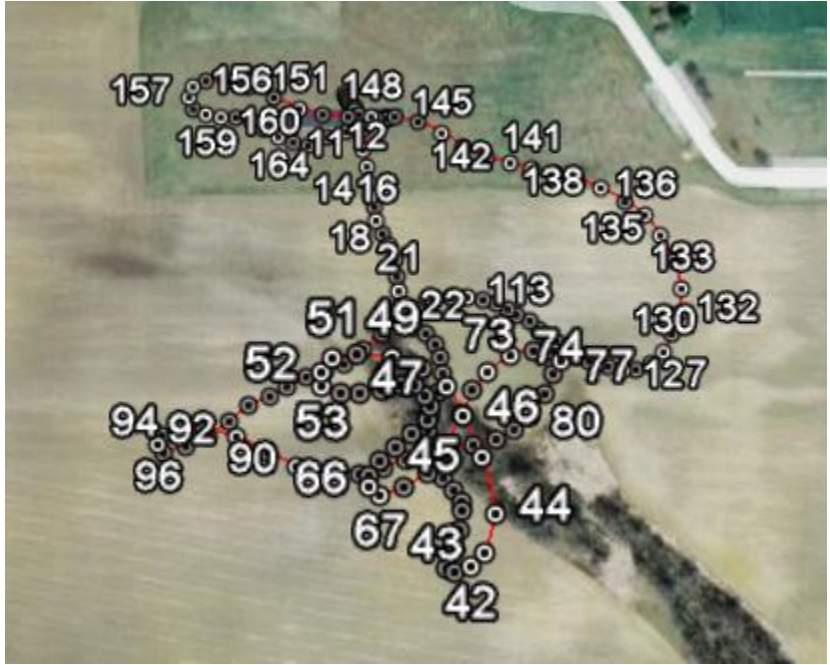
After the trace is loaded into Google Earth, you will see a new item under the Temporary Places in Google Earth's Places Panel.



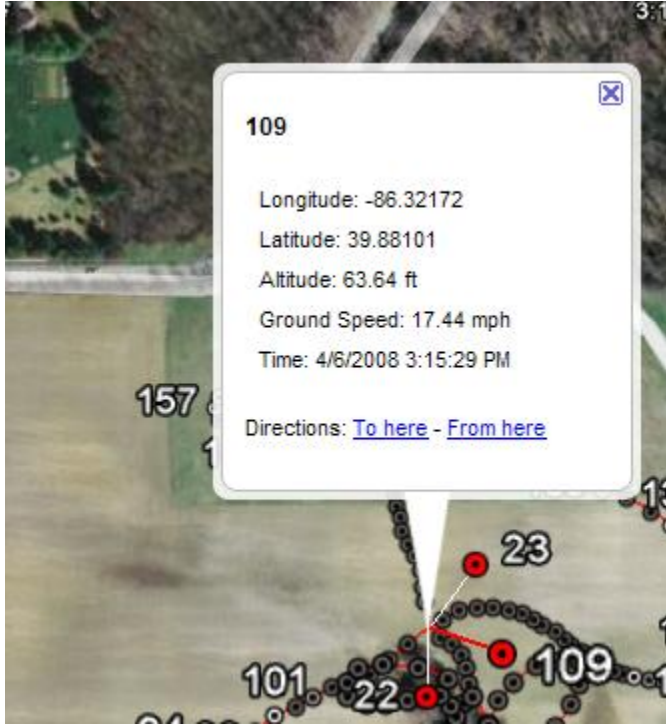
By default the Flight Path is visible, but the Points are not.



Points enabled – a bit cluttered.



But, if you click on a point you'll see the data for that point



You can right click on the Flight Path item or the Points item in Google Earth and change things like color, altitude offset and altitude mode.

Google Earth uses perspective, so if you are viewing a flight from above, the point closest to you will be space further apart. To measure ground distance in Google Earth, set Altitude mode of Clamped to ground (right click on path for properties).

Using the SkyTraceGPS

The SkyTraceGPS must be powered with 3.3V to 6V. You can use a spare receiver connection or a separate battery. Current draw will be about 70ma.

As with all electronic devices, do a range check and don't put it right on top of the receiver or antenna.

The label must face down, the tan and silver square device is the antenna. GPS signals are about 1.5MHz and the SkyTraceGPS must be able to "see" the satellites to determine its position.

The light will indicate the following:

- Solid Green – position fixed (normal operation)
- Flashing Green – acquiring position or attached to USB port
- Solid Amber – memory full
- Flashing Red/Green – clearing memory