

GST-1[©] Troubleshooting FAQ

General:

This FAQ addresses several common problems encountered and address the Windows 2000 associated interface problem. **GST-1's currently being shipped have been re-programmed to avoid the Windows 2000 problem.**

Problem:

How do I know if my GST-1 is working ?

Solution:

With the Earthmate[®] connected to the GST-1[©] and the GST-1 connected to the computer you can use a terminal emulator program such as Hyperterminal or, (our preference, the Freeware Program: TerraTermPro <http://hp.vector.co.jp/authors/VA002416/teraterm.html>) to view the output data from the GST-1[©].

Make sure that you have fresh batteries in the Earthmate[®] or are using an external power adapter.

Set the serial port characteristics:

- 4800 baud
- 8 bit data
- No Parity
- 1 stop bit.

You should see an immediate burst of six lines of NMEA data, followed by about a 3-second delay and then bursts of data every second. Each line of NMEA data after the first immediate burst starts out "\$GP" and a string of comma delimited data.

The immediate burst of six lines of data is to keep Windows 2000 from shutting down the COM port before the Earthmate is initialized. If you are not using Windows 2000 the data will be ignored.

For example:

```
$GPRMC,092204.999,A,4250.5589,S,14718.5084,E,0.00,89.68,211200,.,*25
$GPGGA,235947.000,0000.0000,N,00000.0000,E,0,00,0.0,0.0,M,.,,0000*00
$GPGSA,A,3,01,20,19,13,,,,,,,,,40.4,24.4,32.2*0A
```

Look at the \$GPRMC line:

\$GPRMC,092204.999,A,4250.5589,S,14718.5084,E,0.00,89.68,211200,,*25

Note:^ If this character is an “A” it means the GPS has acquired the satellites, a “V” means that the GPS has not found the satellites yet and is still searching. Wait about 10 to 15 minutes and if an “A” doesn’t appear then move the GPS to a new location where it has a clearer view of the sky.

Problem:

I tried to use my GST-1[©] with Microsoft Streets and Trips[®] and the GPS selections are all grayed out.

Solution:

Microsoft Streets and Trips[®] (2001) requires that you do a specific install of the GPS interface.

Insert your Microsoft Streets and Trips[®] setup disk in the CDROM Drive.

If you currently have Streets and Trips running, close the application.

☼ Click the “MY COMPUTER” icon on your desk top

☼ Select the CDROM drive.

☼ Click your mouse on the GPS folder

☼ Double click on the Setup.exe icon.

Follow the instructions.

These instructions are available from the Microsoft Streets and Trips Help Wizard by entering "GPS" as the inquiry and selecting the “Installing a GPS” offering.

Problem:

I started the GPS with Microsoft Streets and Trips[®] and the status box says initializing but never shows a position and the (time may or may not be correct).

Solution:

This is caused by the GPS not providing valid navigation information. Usually repositioning the GPS to a different location will solve this problem. Remember the GPS must have a clear view of the sky to work. If you are indoors it may not be possible for the GPS to operate. See “How do I know if my GST-1 is working” (above) for more information.

Problem:

The GPS has a clear view of the sky but does not give a valid position.

Solution:

If you are not using an external power adapter make sure that you have fresh batteries installed in the GPS.

Problem:

The GPS has fresh batteries or I am using an external power adapter and the status is still “initializing”

Solution:

If your Earthmate[®] has not been used for an extended period of time or has been transported a long distance with power off it may take up to several hours to determine its location for the first time. Once it has finally determined its location, the long delay will go away. See the next question for more information.

Problem:

I moved to Europe from the United States is there any way to initialize the Earthmate[®] to my new location?

Solution:

We have available a freeware program “InitEartha”[©] which will allow you to initialize your Earthmate[®]. This program can be downloaded from our web site. This program does require that there be fresh batteries in your Earthmate[®] and you must be using the Microsoft Windows 95, 98, NT, ME or 2000 operating system.

Use of the GST-1[©] with Microsoft Streets & Trips[®] under Windows 2000

NOTE:

Firmware in the GST-1 has been modified to work around this problem. We began shipping the modified firmware on December 4, 2001. GST1's currently being shipped should not be a problem.

We offer an update service for older GST-1's, at a nominal charge contact us through our web site for further details: <http://www.byonics.com/gst-1/> .

Overview of details:

Under Windows 2000 the Serial Com ports are handled in a slightly different manner which causes a timing problem when trying to use the GST-1[©] with Microsoft Streets and Trips[®]. **As far as we can determine, all Microsoft GPS Mapping software has this same timing problem .**

The cause of the problem is as follows:

The normal state of the serial port control lines, (DTR and RTS), is off which means that the GST-1[©] initially has no power. This is not a problem as long as the control lines are activated by the map application.

Microsoft Streets and Trips pulses the lines high for about one or two seconds and looks for NMEA data out of the GPS. If no data is detected, Streets and Trips turns off the control lines and declares “No GPS Found”.

In the case of the GST-1[©] about three seconds are required for the initial handshaking and setup before NMEA data will be produced. This is only an initial startup delay; subsequent NMEA data is output as soon as it is produced. Normally this is a group of 3 NMEA sentences every second.

Streets and Trips pulsing of the control line does not allow for the initial setup time for the Earthmate[®] GST-1[©] combination thus Streets and Trips[®] reports no GPS Present.

Work-Around for GST-1's shipped prior to December 4, 2001

Note: This does not apply to Sony SkyMap[®] users.

For early GST-1's being used with an Earthmate[®] one solution is to use a Delorme external power adapter for the Earthmate[®],

<http://www.delorme.com/earthmate/accessories.asp#power>

These adapters, while initially perhaps a bit pricey, offer several advantages, and in the case of the GST-1[©] an added bonus.

First, the power adapters eliminate the need for batteries and thus they will pay for themselves over time.

Second and most important for this discussion, the GST-1[©] will also derive its power from the external power adapter and the pulsing of the control lines will not prevent the GST-1[©] from operating.

The bonus with the GST-1[©] is that, as long as the power adapter is supplying power, the GST-1[©] keeps talking to the Earthmate[®] even though the mapping software is not active. When the mapping software is started, (assuming that the Earthmate[®] has a clear view of the sky), the mapping software will have instant accurate position with no startup delay.

Connection of the External Power Adapter:

The Delorme[™] external power adapter cable normally connects between the computer and the Earthmate[®] GPS. When using the GST-1[©] simply connect the Earthmate[®] to the GST-1[©] and connect the power adapter cable between the computer and the GST-1[©].

Another approach:

Our web site also discusses a 9 volt battery work around for powering ONLY the GST-1[©]. This will work as well but you will still need the batteries in your Earthmate if you use this approach.

Problem:

I have installed the GPS interface in Microsoft Streets and Trips but my GPS doesn't work.

Solution:

In Streets & Trips select: Tool → GPS → Options

Set the correct serial port then press "OK".

With external power applied to the GST-1[©] and Earthmate, select:

Tools → GPS → Tracking

A GPS box should appear in the lower right hand corner of the screen.

See the item above entitled:

"Use of the GST-1[©] with Microsoft Streets & Trips[®] under Windows 2000".

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