

Sony GPSView GPS Evaluation and Development System Software Users Manual

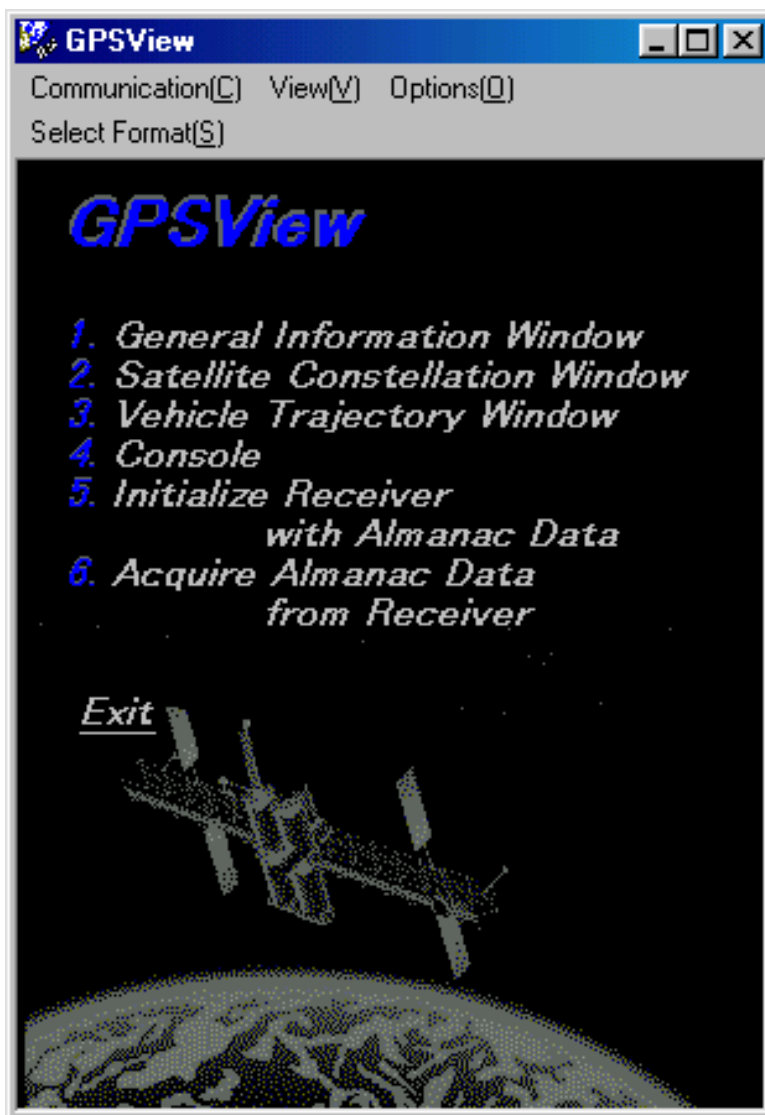


Table of Contents

1. System Requirements

2. Overview

2.1 Quick Start

3. User Interface

3.1. Communication Menu

3.1.1. Connect

3.1.2. Disconnect

3.1.3. Log Data Stream

3.2. View Menu

3.2.1. General Information

3.2.2. Satellite Constellation

3.2.3. Vehicle Trajectory

3.2.4. Console

3.2.5. Close all Windows

3.3. Options Menu

3.3.1. Initialize receiver from almanac data

3.3.2. Acquire almanac data from receiver

3.3.3. Configure COM Mode

3.3.4. Other settings

3.4. Select Format Menu

3.4.1. Sony Standard

3.4.2. Sony Old

3.4.3. NMEA

1 **System Requirements**

Minimum requirement is a PC running Windows® 95, Windows® 98, Windows® NT or Windows® 2000. GPSView requires approximately 700 Kbytes disk space for installation. GPSView also requires access to COM port 1, 2 or 4 for communication with the Sony GXB1000/GXB2000 evaluation Kit.

2 **Overview**

GPSView is the evaluation Software companion to the Sony GXB1000/2000 GPS evaluation kit. GPSView provides a convenient user interface to communicate with the evaluation kit so that the user can access all and display relevant operating parameters of the GPS hardware. It also provides a simple console permitting the user to upload commands to the module or to view raw satellite data as it is acquired from the satellites at a rate of 1 output per second.

GPSView will display Date, Time, Latitude, Longitude, Height, Velocity, Heading, SV (Space Vehicle – the satellite) signal strength and position in the sky. GPSView also provides a vehicle tracking screen that plots a moving vehicles coordinates in real time.

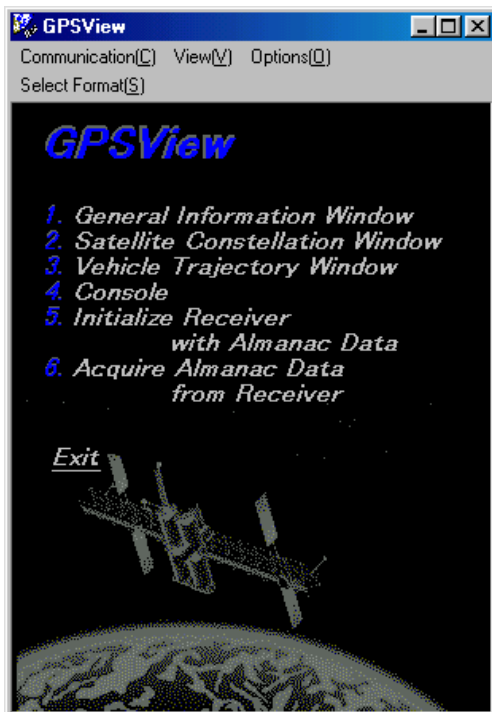


Figure 1

When launched GPSView opens the window shown on left in figure 1 making all the common functions immediately available from the main screen. Like most such applications, the user can access commands by, mouse or using the ALT key.

Each operation selectable from this window is described in more detail in the following sections of the user manual.

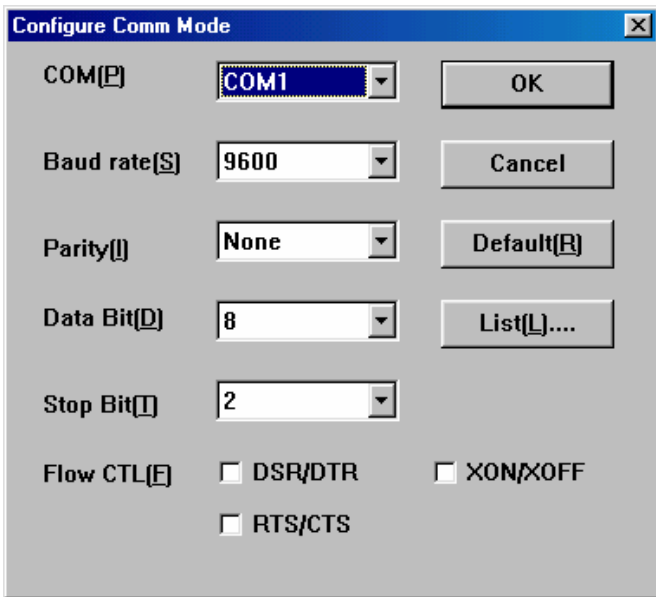


Figure 2

2.1 Quick Start

In general the GPSView software needs to establish communication with the GPS evaluation kit. To accomplish this the Baud rate should be set to 9600 the GXB1000/2000 default. The window shown in figure 2 is accessible from the Options – Configure Comm port menus.

Once the COM port has been set it is advisable to disconnect and then reconnect the communication from the home window shown in figure 1. Once this has been accomplished, the GPS evaluation kit will communicate with the GPSView software and it will be possible to observe the system operation and interact with the GPS module.

Comment:

Basic system set up

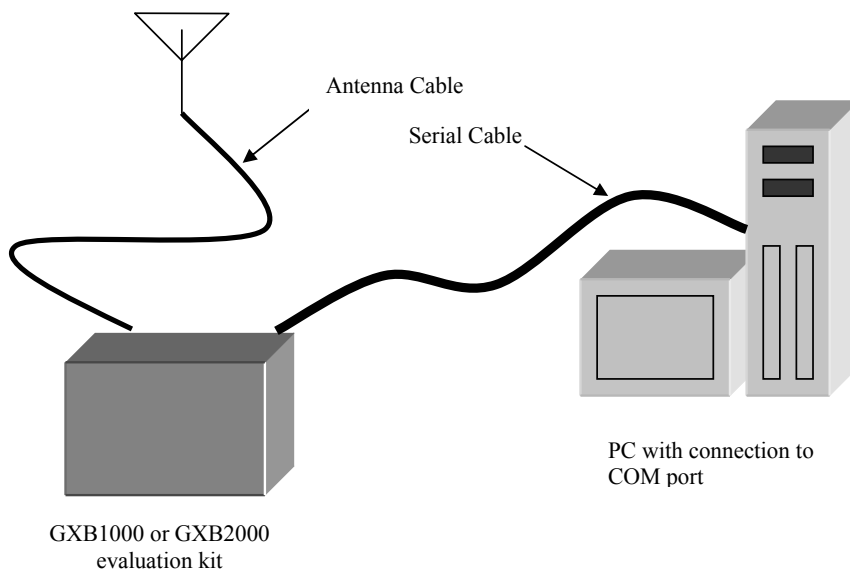


Figure 3

3. User Interface

3.1 Communications Menu

The Communications Menu available from the main screen (Figure 4) is used to reset the COM port to exchange data with the evaluation kit. Generally after a reset or change in communication parameters such as baud rate or change in format it is advisable to select disconnect and then connect to initialize the COM port.

3.1.1 Connect is used to establish the link between the GXB1000/2000 and GPSView software at the COM port interface.

3.1.2 Disconnect is used to break the connection between the GXB1000/2000 and the GPSView software at the COM port interface.

3.1.3 Log Data Stream is the final option from the Communication Menu. If a log file has already been opened, the file name will be displayed next to the menu selection and a check mark will be shown. Clicking on Log Data Stream a second time will close the log file.

By default, GPSView names the log file GPS.DAT.

To select a different file name choose NEW(N) otherwise choose OK (Figure 5) to record to a previously used file. GPSView will not write over the previous file but will instead concatenate data at the end of the file. If NEW(N) is selected a dialog box opens (Figure 6) so that a new file name can be specified. All data is logged in the format specified in the **Format Menu**. Details of the Sony binary data format can be found in the CXD2930R or CXD2931R data sheets.

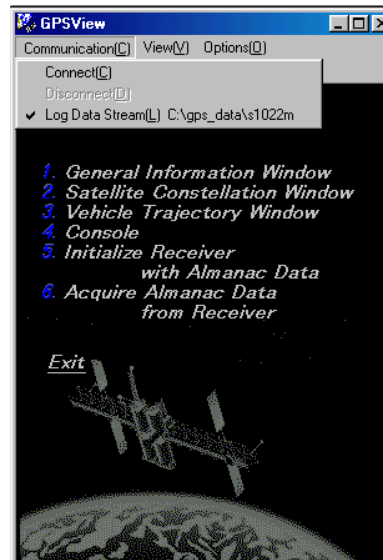


Figure 4

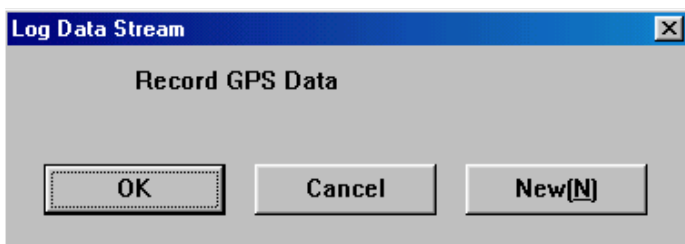


Figure 5

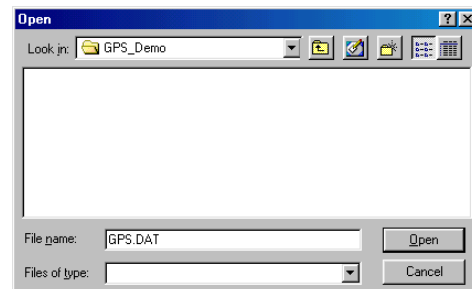


Figure 6

3.2 View Menu

The View Menu (Figure 7) provides access to all satellite related functions. The user is able to determine the particular satellites tracked, the signal strength for a particular SV (space vehicle) at the receiver and which SV are being used to determine position fix. In addition the View menu provides access to Latitude, Longitude, Height, Heading and Velocity measurement as well as the capability to display a vehicle ground track.

More specifically, the General information window displays Latitude, Longitude, Height, Heading, Velocity, Time Satellites tracked and Signal Strength. For more information see Figure 8.

The Satellite Constellation window provides a graphical display of the position of the SV visible in the sky. For more information see Figure 9.

The Vehicle Trajectory window plots the ground track of a moving vehicle on a PC screen. For more information see Figure 10.

The Console gives direct communications access between the receiver and GPSView software. This enables the user to send commands to the GXB1000/2000 and to monitor all response from the receiver. A complete list of commands can be found in the CXD2930R or CXD2931R data sheets. For more information see Figure 11.

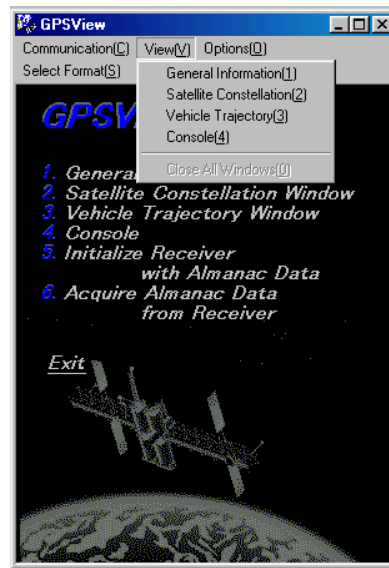


Figure 7

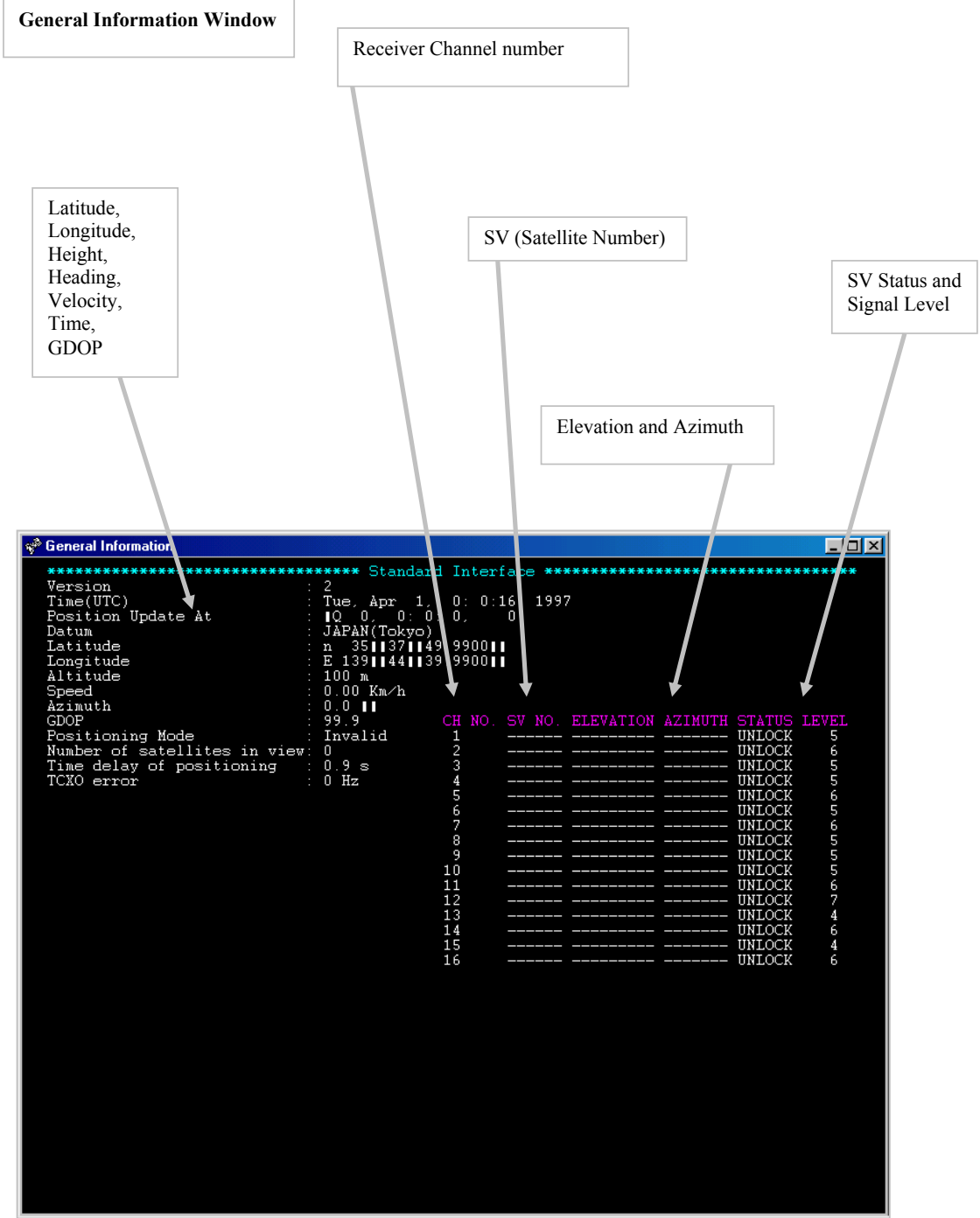


Figure 8 General Information Window

Satellite Constellation Window

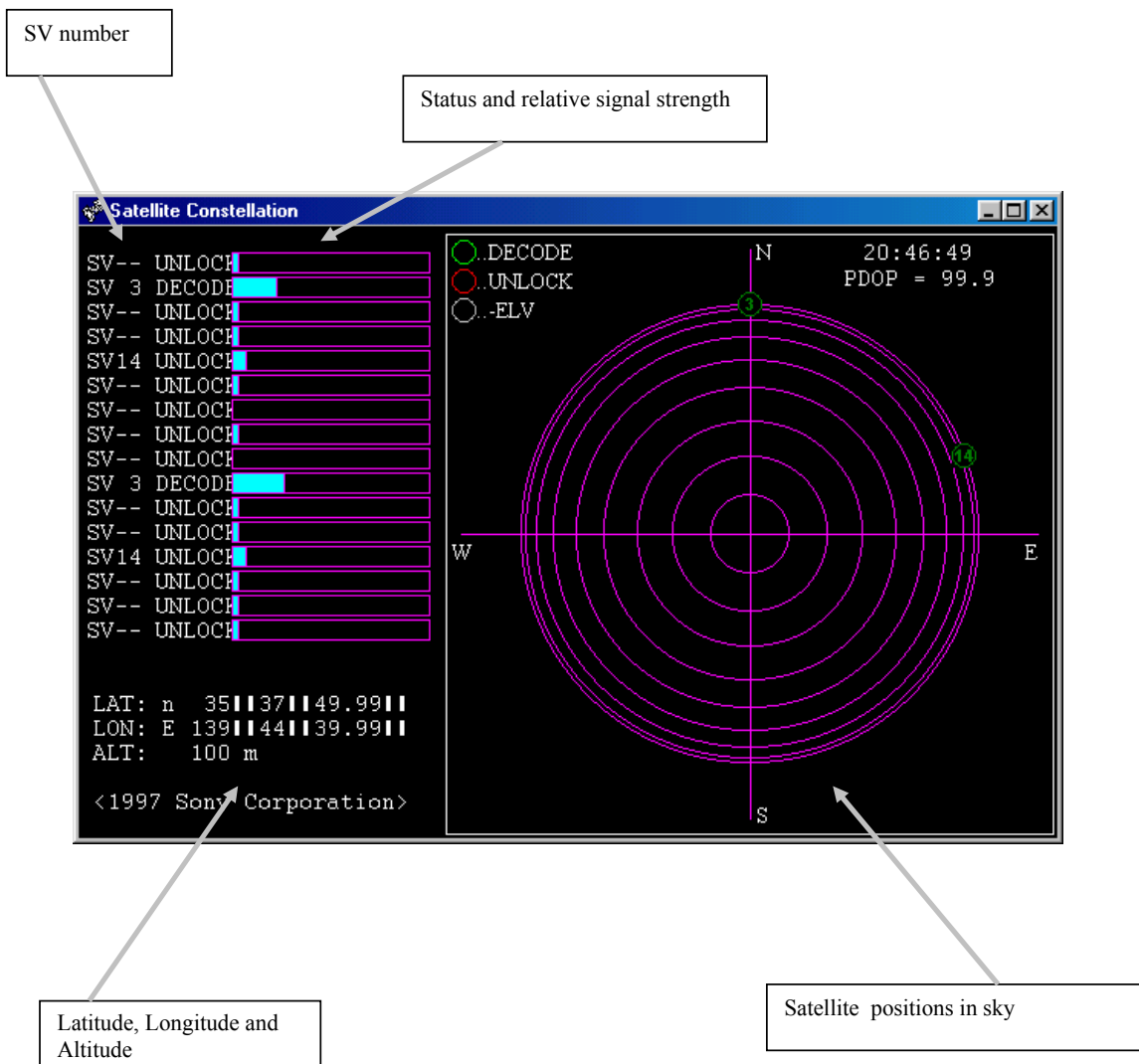
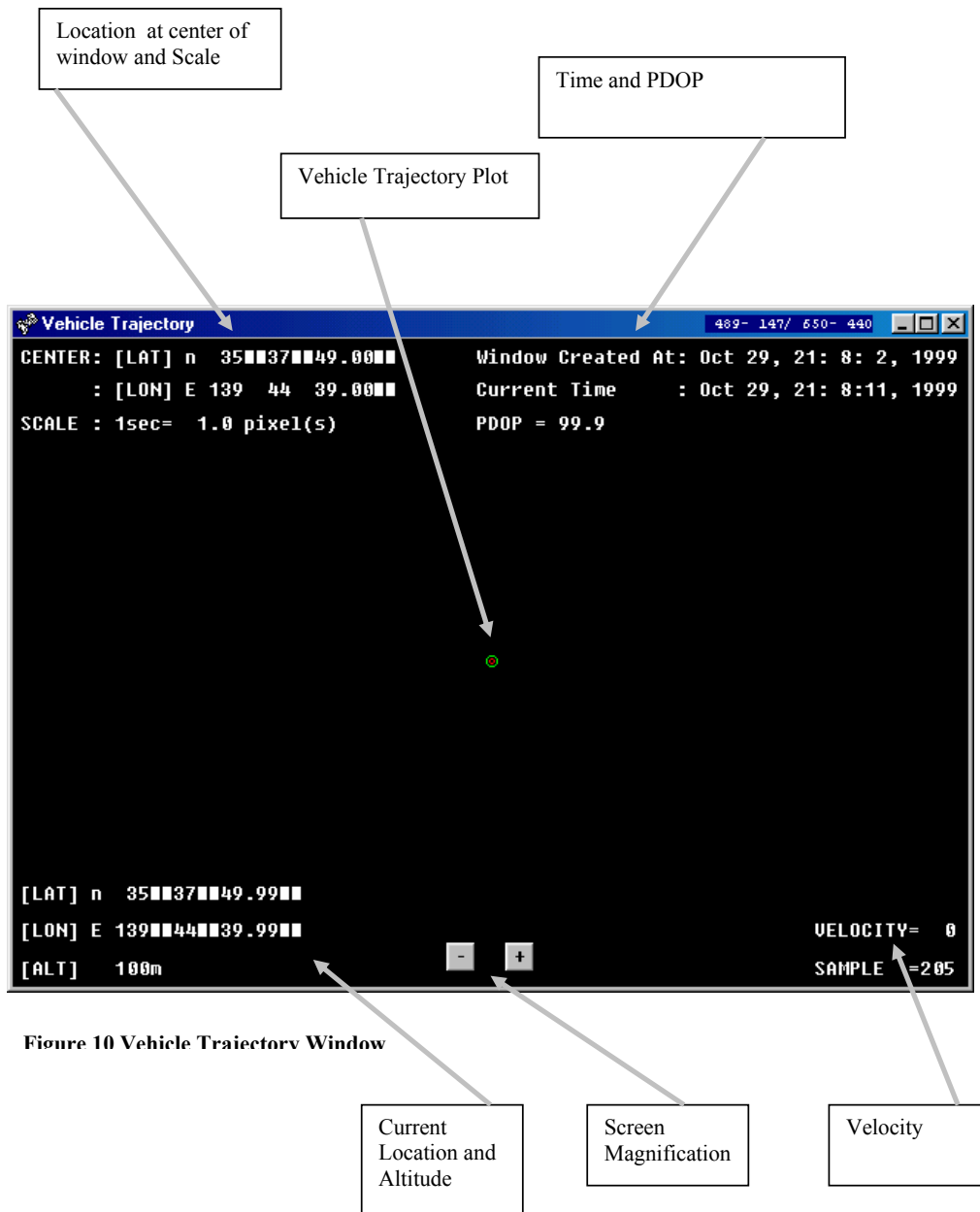


Figure 9 Satellite Constellation Window

Vehicle Trajectory Window



Console Window

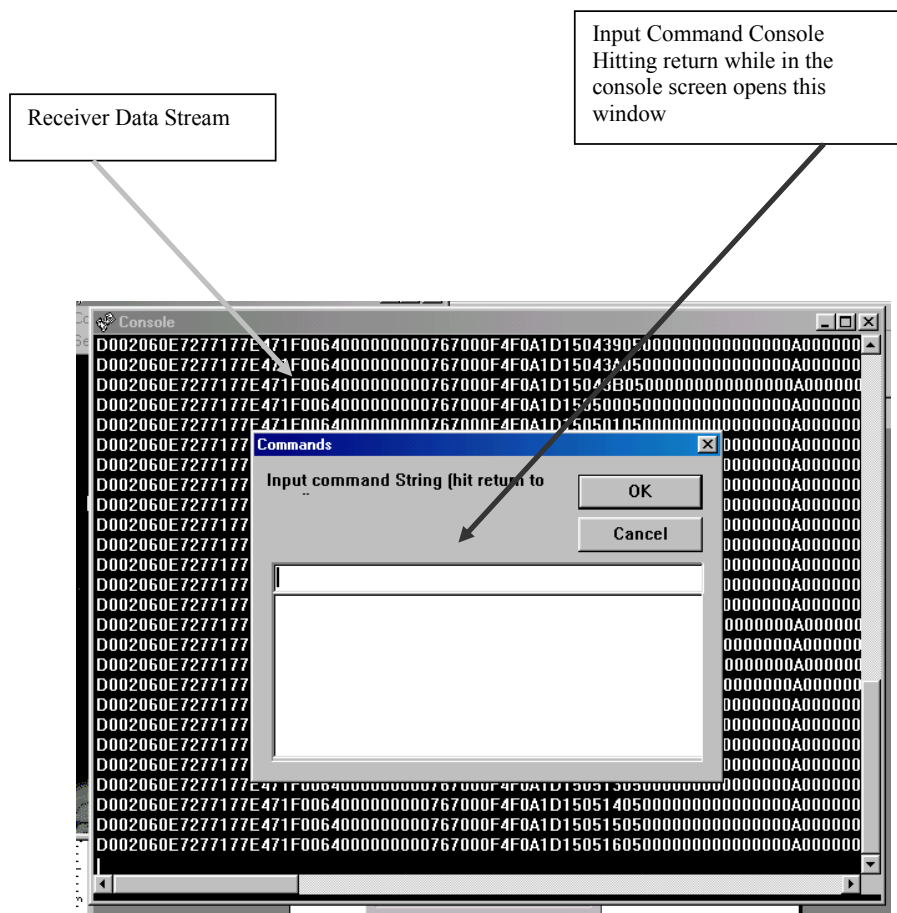


Figure 11 Console Window.

3.3 Options Menu

The Option Menu provides the capability to upload an almanac to the GPS Receiver or save an almanac from the receiver as a file. These functions are also directly accessible from the main screen (Figure 12). By default the almanac is saved as AL.DAT but a file name and path may be specified. Providing the receiver a current almanac after a cold start can significantly reduce the TTFF (Time To First Fix).

3.3.1 Initialize Receiver from Almanac Data

When executed this command will clear the receiver memory and follow by uploading the almanac stored in a file. By default this file is AL.DAT unless otherwise specified.

3.3.2 Acquire almanac Data from Receiver

when executed opens a window to prompt for verification that it is OK to Create/Update almanac data. Clicking OK starts the process of acquiring the almanac. Figure 13 is an example of an almanac file.

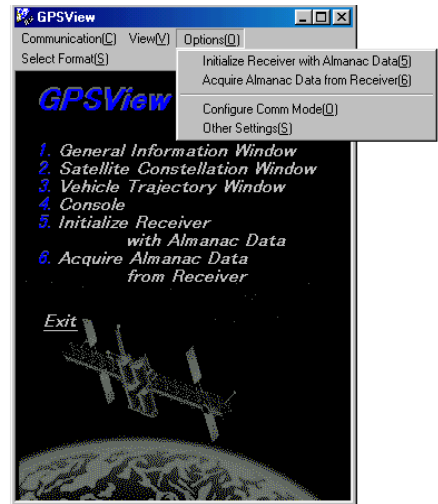


Figure 12

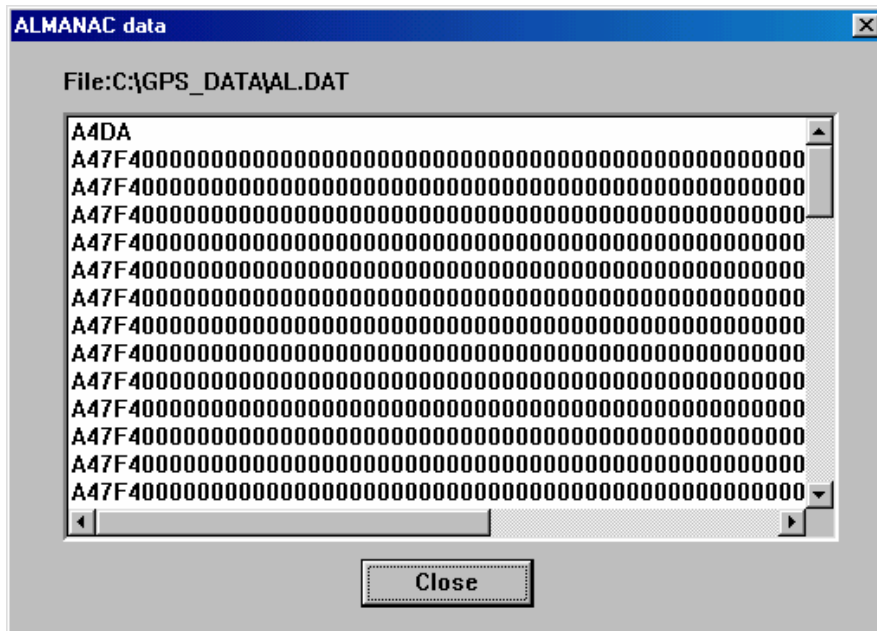


Figure 13

3.4 Select Format

3.4.1 Sony Standard format supports the Sony binary format. Details of the format can be found in the CXD2930R or CXD2931R data sheets. This is the format to use with the GXB1000 or GXB2000. Note that the evaluation kit hardware has a two position switch for selecting either Sony format or NMEA format. The switch setting should agree with the GPSView format selected. Whenever this switch setting is changed, the module must be reset or the power must be cycled before the new format takes effect. After changing the format it is advisable to reset the COM port. See section **3.1 Communications** for details.

3.4.2 Sony Old format is provided for backward compatibility with previous generations of Sony GPS modules.

3.4.3 NMEA format provides support for the National Maritime Electronics Association. Use of this format may enable the GXB1000/2000 to communicate with third part support tools such as mapping software. However, it should be noted that setting the two position switch on the evaluation kit to the NMEA setting enters the NMEA mode of operation. Whenever this switch position is changed it is necessary to reset the evaluation kit or cycle the power. Further, communication should be reset as NMEA may support a different baud rate the currently selected Sony format. See section **3.1 Communications**.

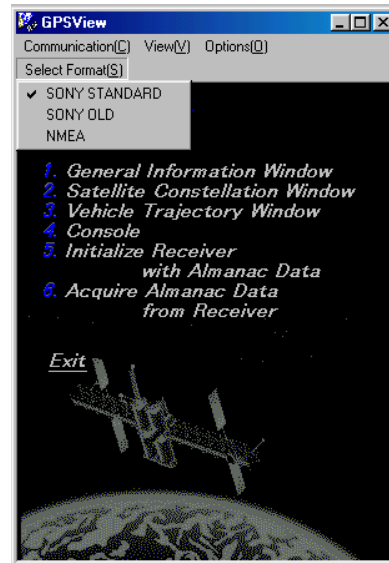


Figure 14