SONY

GPSView 2003 User Manual
for CXD2951

Version 1.20
Sep 24, 2003

(These specifications are currently under development, so Sony reserves the right to change the contents without prior notice.)

1 System Requirements

- Windows 98, Windows 2000, or Windows XP
- 1.0MB of available hard-disk space
- One available serial port

2 Overview

GPSView enables evaluation and development with the *CXD2951* GPS Receiver. Serial communications (UART) connect a PC running GPSView to a *CXD2951* evaluation board. GPS status—including latitude, longitude, altitude, speed, and azimuth—can be downloaded to GPSView in real time. Other GPS information, such as acquisition assistance data, can be uploaded or downloaded through GPSView. Finally, commands can be transmitted to control *CXD2951* itself.

Fig. 2-1 shows the main window of GPSView, from which the main functions of GPSView are accessible. This document describes each of these functions in turn.

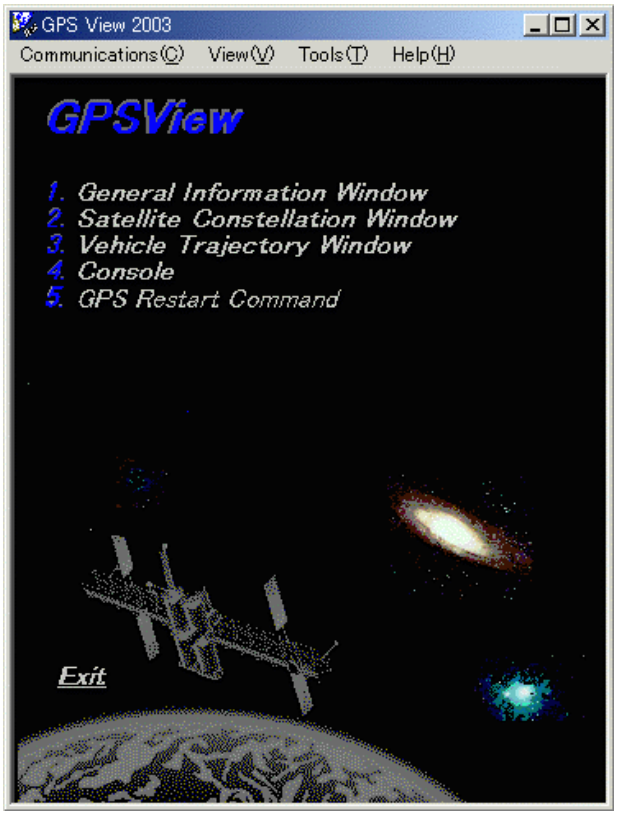

Fig. 2-1 GPSView main window

2.1 Connecting to *CXD2951 GPS Receiver*

GPSView must establish communication with *CXD2951* before any GPSView functions can be activated. Communication occurs using the NMEA (National Marine Electronics Association) format.

The window shown in **Fig. 2-2** is accessible through the *Tools/Configure COM port* menu. Settings should correspond to **Table 2-1**. Once the COM port settings have changed, use the *Disconnect* and *Connect* commands in the *Communications* menu to re-initialize communication (see section 3.1).

If communication has successfully been initialized, and if *CXD2951* is active, *CXD2951* will continuously report its system operations. This report (in raw NMEA format) can be viewed through the *Console* function on the main window. If no output is displayed in the *Console*, either communications have not been initialized successfully, or *CXD2951* is not active. If the displayed output is not composed of standard ASCII characters, then the COM settings (most probably the baud rate) are incorrect.

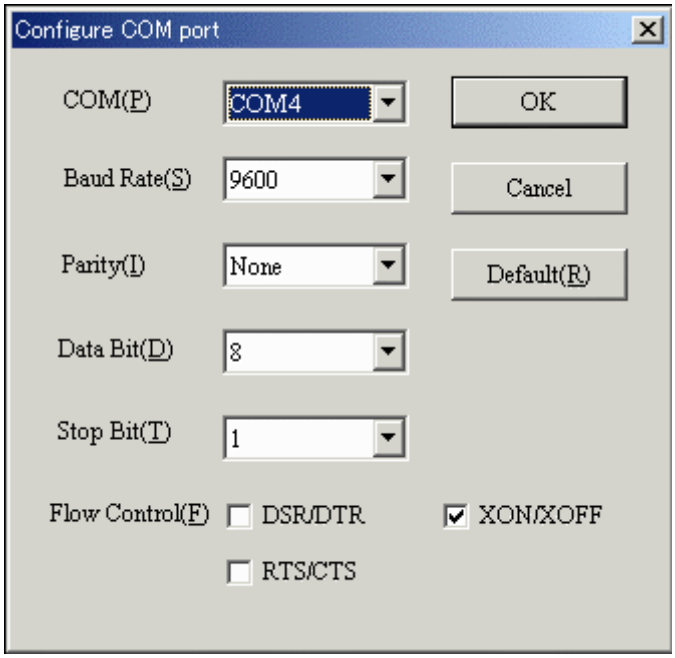

Fig. 2-2 Configure COM port Dialog

Baud Rate	9600 (NMEA)
Parity	None
Data Bit	8
Stop Bit	1
Flow Control	XON/XOFF

Table 2-1 CXD2951 COM Settings

3 User Interface

3.1 Communications Menu

The *Communications* Menu is accessible through the main window (**Fig. 3-1**). It is used to reset the COM port and to log data transmitted from *CXD2951*. Generally, after a reset or change in communication parameters (such as baud rate or format) it is advisable to select *Disconnect* and then *Connect* to reinitialize the COM port.

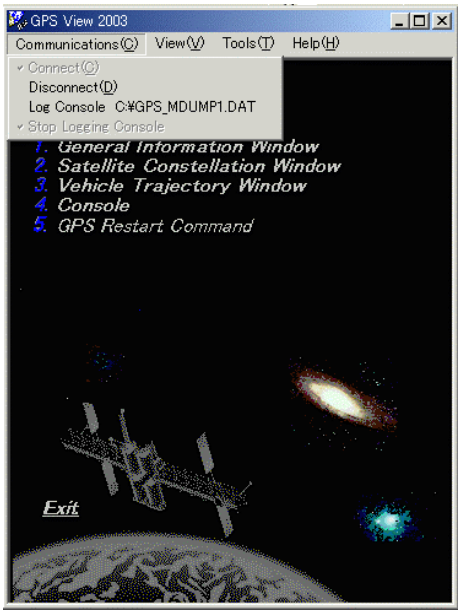

Fig. 3-1 Communications Menu

3.1.1 Connect

Select *Connect* to establish communication between *CXD2951* and GPSView. Before connecting, ensure the COM settings are correct (see section 2.1), and that another application is not currently accessing the COM port.

3.1.2 Disconnect

Select *Disconnect* to break communication with *CXD2951* and free the COM port.

3.1.3 Log Console

Use *Log Console* to record *CXD2951* output.

A checkmark beside *Log Console* indicates that *CXD2951* output is currently being recorded. Upon selecting *Log Console*, the Dialog Box in will appear. The default file name is "GPS_MDUMP.DAT."

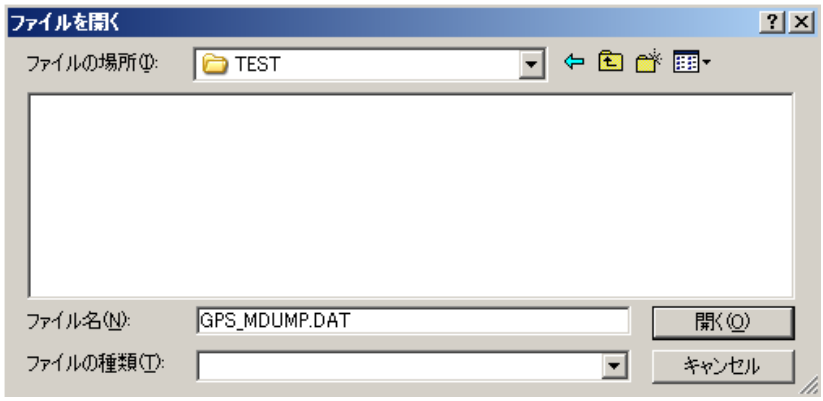

Fig. 3-2 Log Console Dialog Box

3.1.4 Stop Logging Console

A checkmark beside *Stop Logging Console* indicates that *CXD2951* output is not currently being recorded. Chose this item to stop recording data.

3.2 View Menu

There are 9 items in the *View* menu. (**Fig. 3-3**) Select each item for the corresponding position and satellite information.

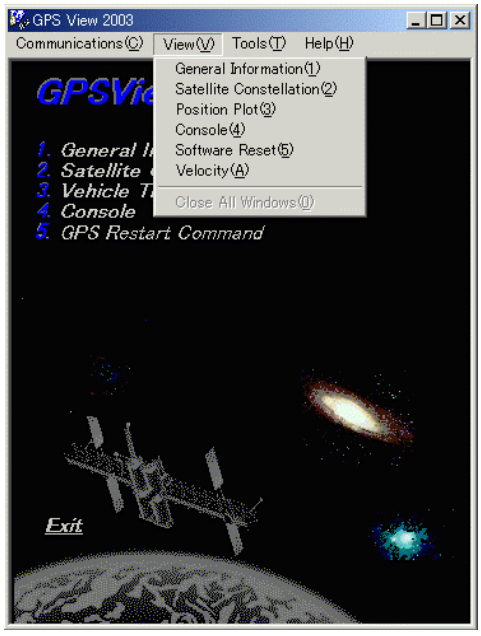

Fig. 3-3 View Menu

3.2.1 General Information

Select *General Information* to open the window shown in **Fig. 3-4**. Latitude, longitude, altitude, speed, azimuth and satellite information are displayed.

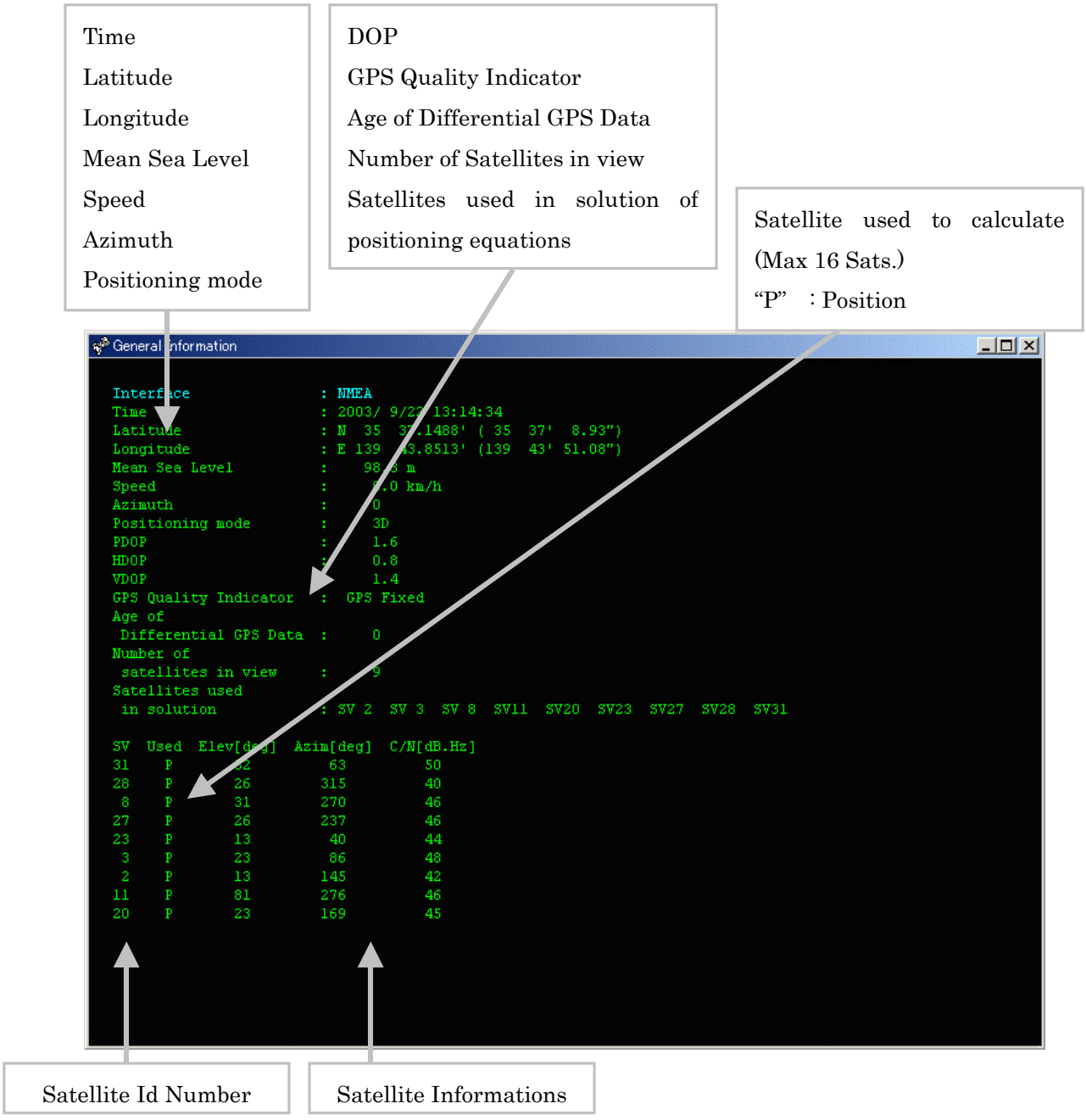

Fig. 3-4 General Information Window

3.2.2 Satellite Constellation

Select *Satellite Constellation* to open the window shown in **Fig. 3-5**. On the left, the signal reception strength is shown for each satellite currently being tracked. On the right, the satellite constellation is shown for each satellite currently in view.

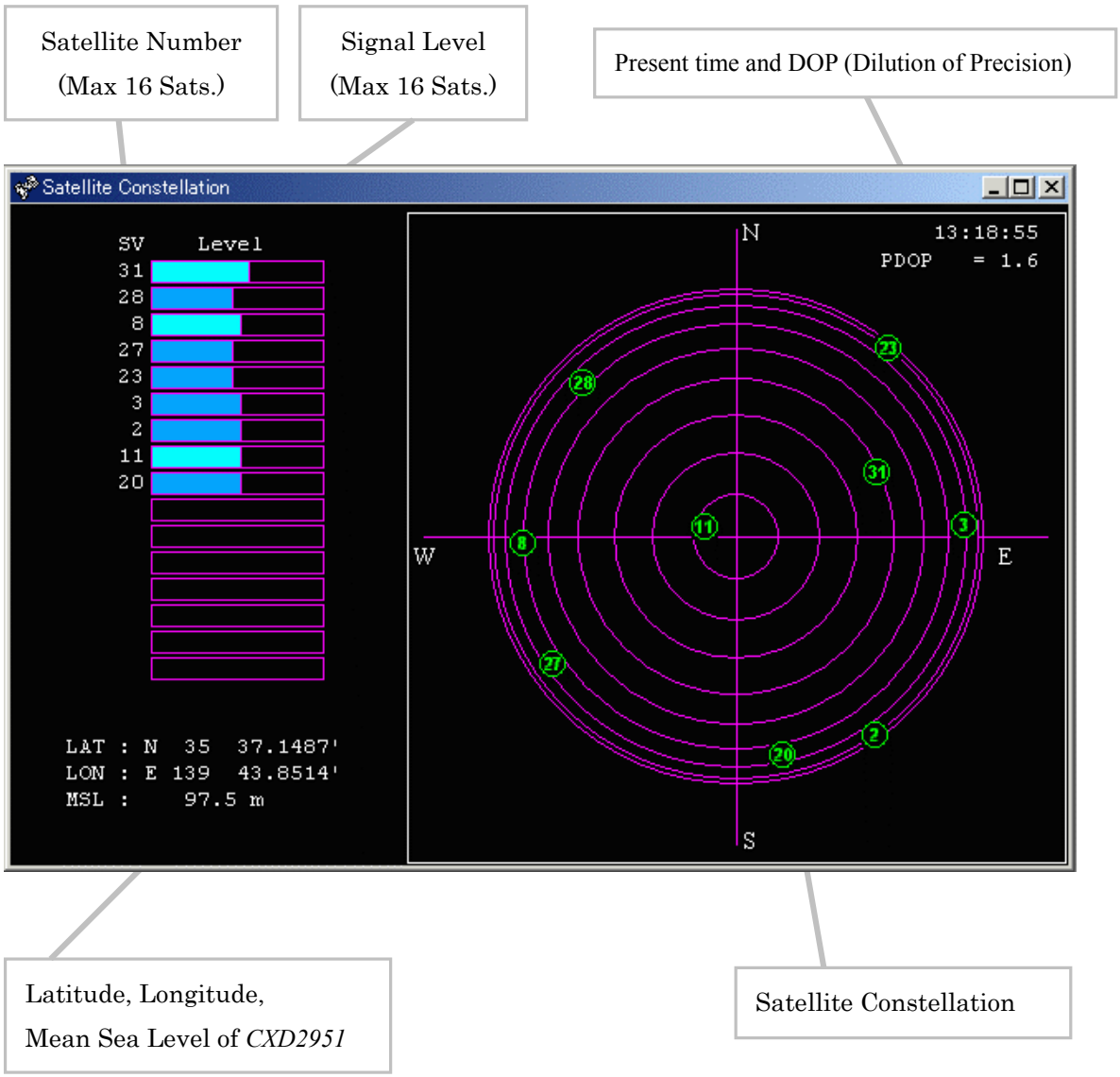

Fig. 3-5 Satellite Constellation Window

3.2.3 Position Plot

Select *Position Plot* to open the window shown in **Fig. 3-6**. This window plots the position history of the *CXD2951* receiver.

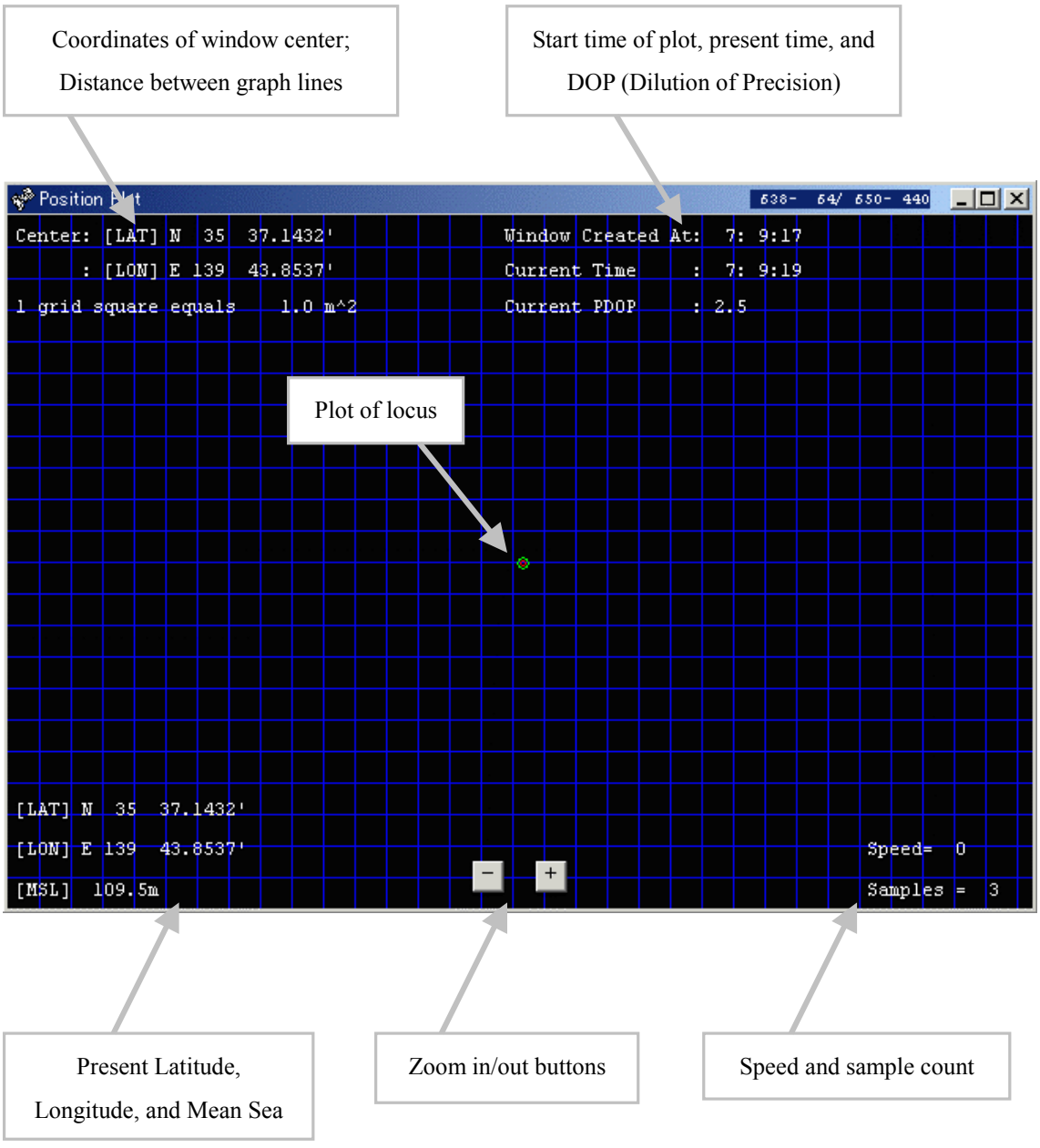

Fig. 3-6 Position Plot Window

3.2.4 Console

Select *Console* to open the window shown in **Fig. 3-7**. This window displays the data sequences transmitted from *CXD2951*. If a key is pressed when the window is active, the dialog box shown in **Fig. 3-7** appears. Commands input through this dialog box will be transmitted verbatim to *CXD2951*. The *CXD2951* command format is detailed in *CXD2951 Communication Command Specifications*.

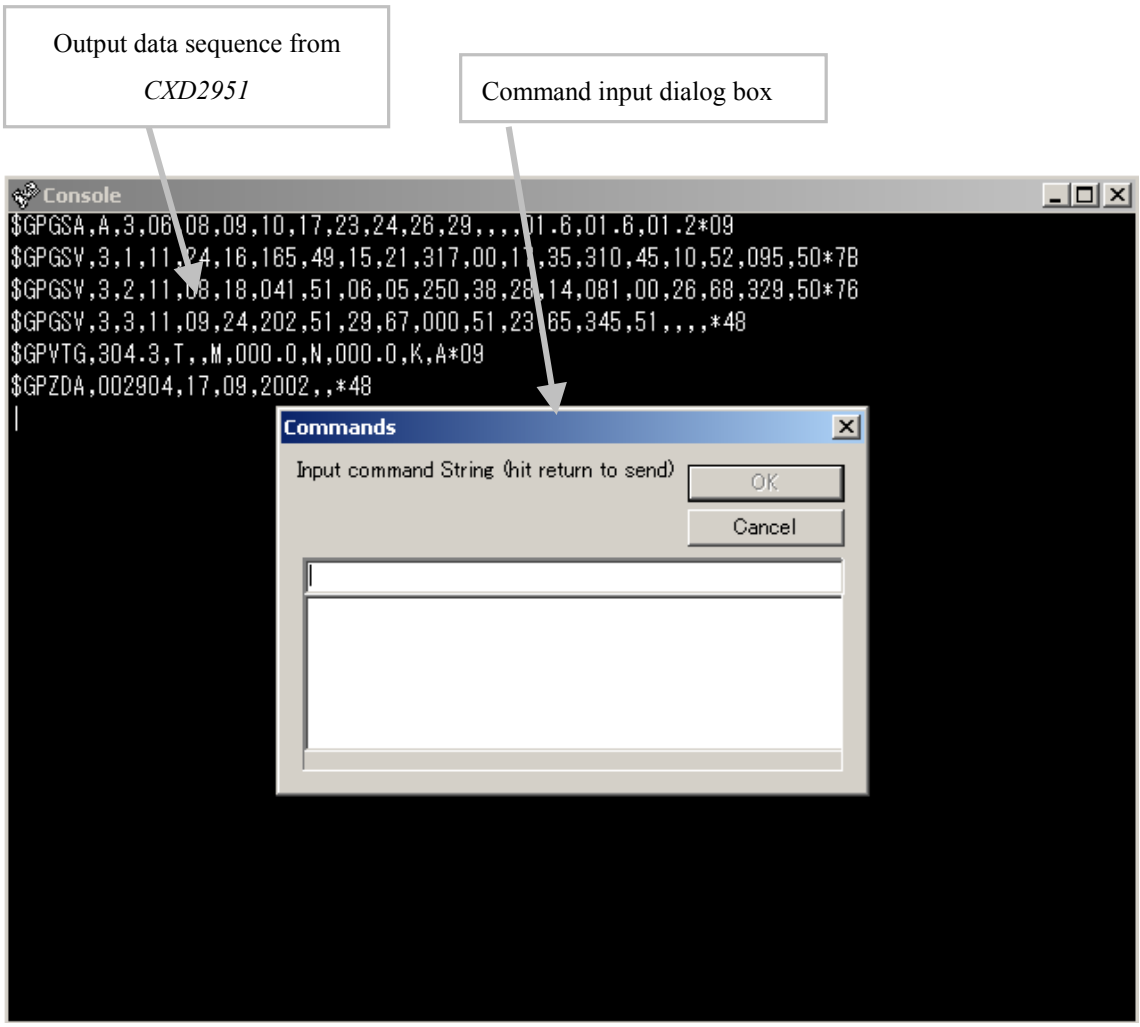

Fig. 3-7 Console Window

3.2.5 Software Reset

Select *Software Reset* to open the window shown in **Fig. 3-8**. Use this window to test the various start modes—Cold, Warm, Hot—of *CXD2951*.

Fig. 3-8 Software Reset Window

3.2.6 Velocity

Select *Velocity* to open the window shown in **Fig. 3-9**. This window graphs the speed and heading history.

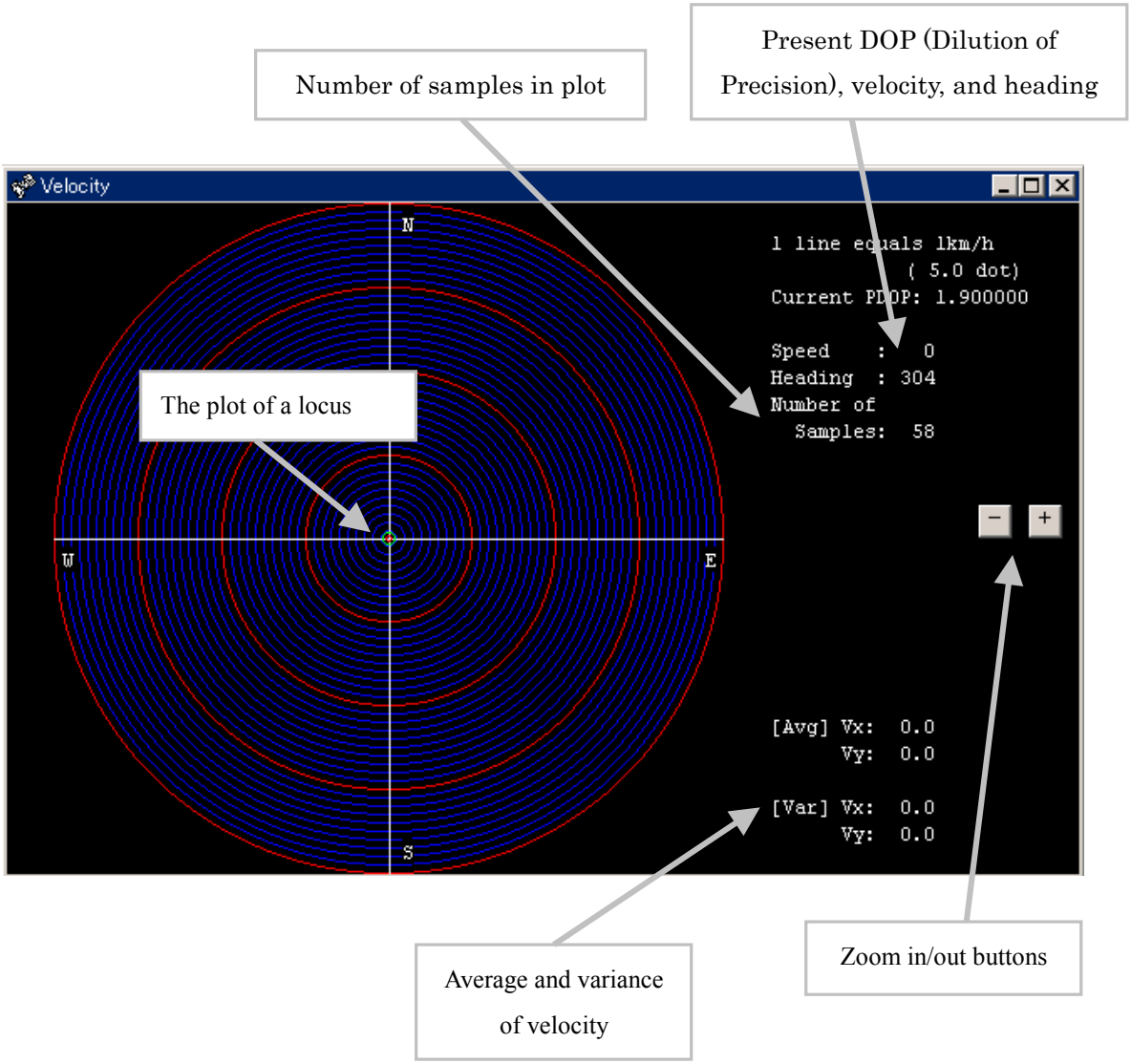

Fig. 3-9 Velocity Window

3.3 Tools Menu

There are 7 items in the *Tools* Menu（**Fig. 3-10**）. Select each item to initialize *CXD2951*, input or output almanac and ephemeris data, or setup communications. Refer to section 2.1 for the *Configure COM port* menu item.

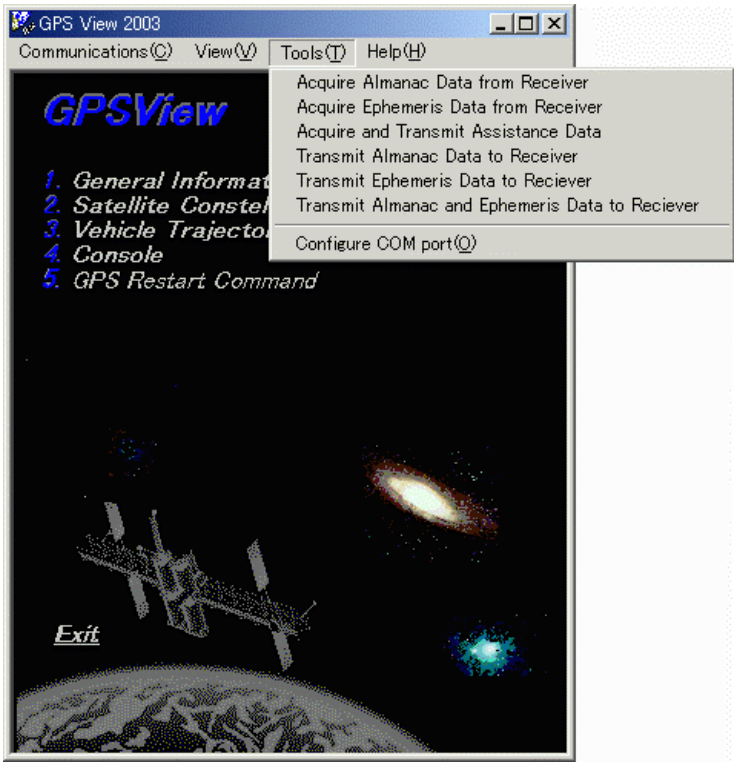

Fig. 3-10 Tools Menu

3.3.1 Acquire almanac Data from Receiver

When *Acquire almanac Data from Receiver* is selected, almanac data will be read from *CXD2951* and saved to the file "AL.DAT." (**Fig. 3-11**)

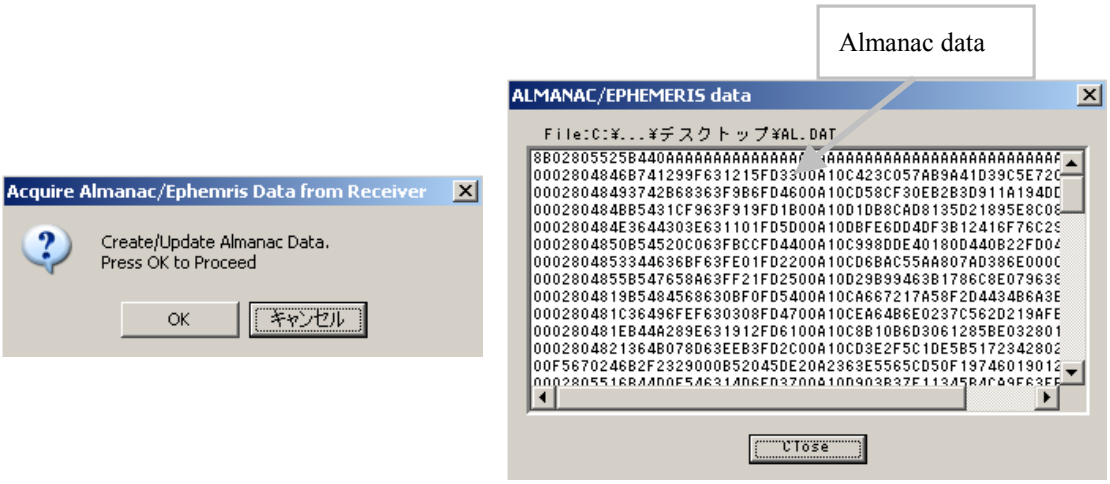

Fig. 3-11 Acquire almanac Data from Receiver

3.3.2 Acquire Ephemeris Data from Receiver

When *Acquire Ephemeris Data from Receiver* is selected, ephemeris data will be read from *CXD2951* and saved to the file "EP.DAT." (**Fig. 3-12**)

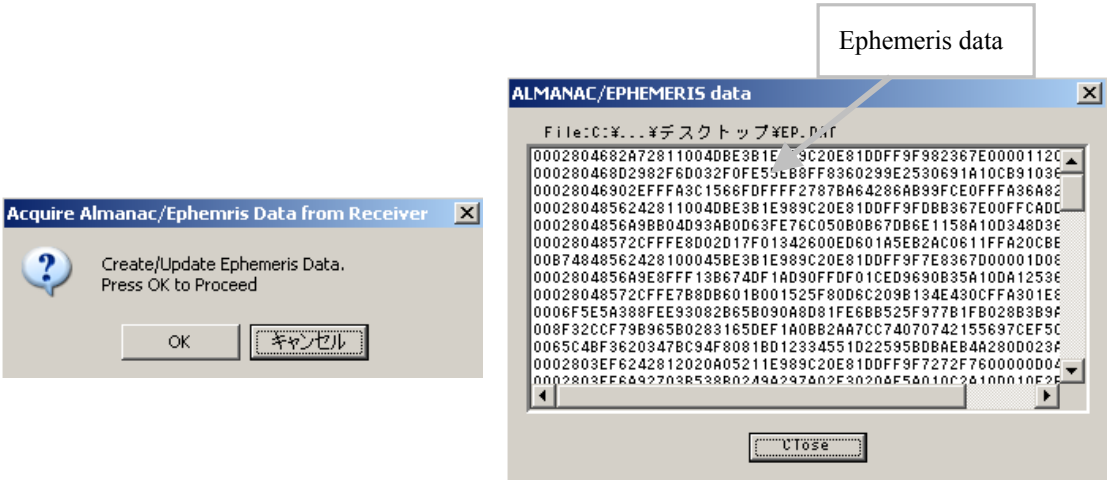

Fig. 3-12 Acquire Ephemeris Data from Receiver

3.3.3 Acquire and Transmit Assistance Data

Select *Acquire and Transmit Assistance Data* to open the window shown in **Fig. 3-13**. This window allows acquisition assistance data to be transmitted to and received from *CXD2951*.

(a) Acquire assistance data

Assistance data will be read from *CXD2951* and saved to the file "AS.DAT."

(b) Transmit assistance data

Assistance data will be read from the file “AS.DAT” and transmitted to *CXD2951*.

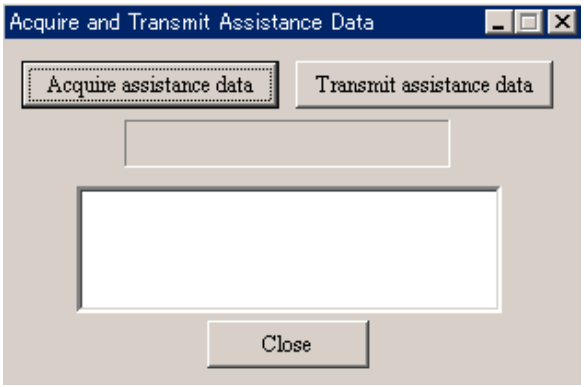

Fig. 3-13 Acquire and Transmit Assistance Data

3.3.4 Transmit Almanac Data to Receiver

When *Transmit Almanac Data to Receiver* is selected, the almanac data saved in file “AL.DAT” will be transmitted to *CXD2951*.

3.3.5 Transmit Ephemeris Data to Receiver

When *Transmit Ephemeris Data to Receiver* is selected, the ephemeris data saved in file "EP.DAT" will be transmitted to *CXD2951*.

3.3.6 Transmit Almanac and Ephemeris Data to Receiver

When *Transmit Almanac and Ephemeris Data to Receiver* is selected, ephemeris and almanac data saved in files "EP.DAT" and “AL.DAT”, respectively, will be transmitted to *CXD2951*.

3.4 Help

Display version and copyright information.

3.5 TTFF Window

When Main Window, General Information Window, Satellite Constellation Window, Velocity Window is active, TTFF Window opens to press ”t” (see **Fig. 3-14**)

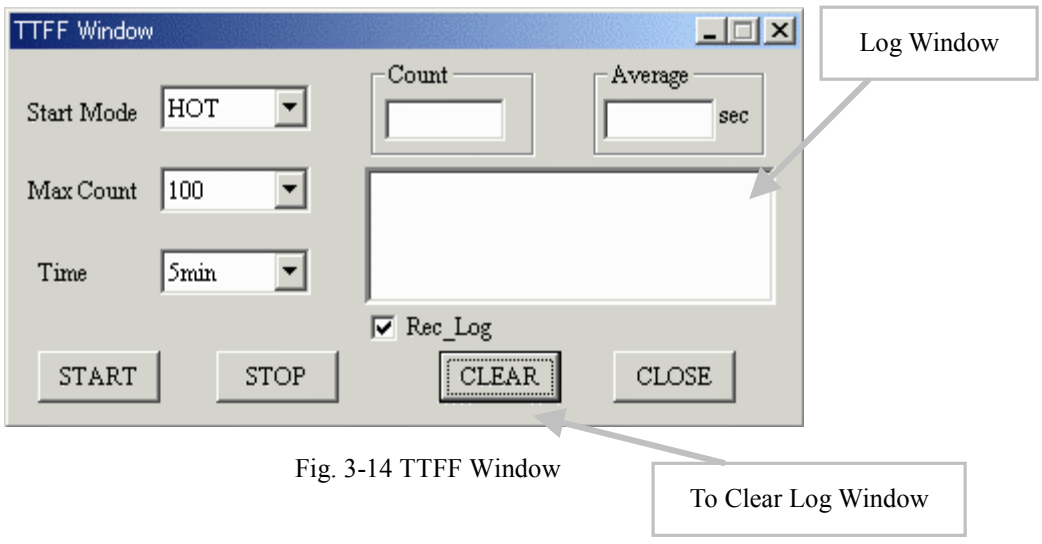

Fig. 3-14 TTFF Window

It can log the position data at First fix issued by specified reset command (Cold, Warm, Hot) and specified interval.

3.5.1 Measurement of TTFF

It should be set below 4 items.

Start Mode : It should be selected an issued reset command from among Hot, Warm and Cold.

MaxCount : It should be assigned the number of times for issued rest command

Time : It is time until next reset command issue after the position fix.

Rec Log : It should be checked this box when it records the Log.

It starts to issue the reset command to push Start button after inputting these 4 items.

3.5.2 TTFF Log File

The TTFF*MODE_mmdd*.dat file regarding **Table 3-1** should be made to check Rec_Log box on the same folder with GPSView_for_CXD2951.exe. MODE means StartMode and mmdd gives its date (For example: Hot start and August22th should be TTFFHOT_0822.dat).

Count	Count of Send Reset Commnad
Year	The year of sending command (UTC of logger PC)
Month	The month of sending command (UTC of logger PC)
Day	The day to send command (UTC of logger PC)
StartTime	The time to send command (UTC of logger PC)
TTFF(s)	Time To First Fix (sec)
Ave(s)	Average of Time To First Fix (sec)
LatDir	East or West (Latitude)
LatDeg	Degree of Latitude
LatMin	Minute of Latitude
LonDir	North or South (Longitude)
LonDeg	Degree of Longitude
LonMin	Minute of Longitude
Alt	Mean Sea Level (m)

Table 3-1 Contents of TTFF Log File

GPSView 2003 User Manual
for CXD2951

Sony Corporation