

TelitView User Guide

1VV0301168 Rev.7 – 2016-12-16



APPLICABILITY TABLE

PRODUCT	
SL871	SC872-A
SL869-V2	SE868-A
SL871-S	SL869-V2S
SE868-AS	
SL869	SL869-DR
SL869-T	SL869-V3
SL869-3DR	SL869-V3T
SL869-ADR	
JF2	SE880
JN3	SE868-V2
SE873	SE868-V3
SL876-A	



SW Version

TelitView 2.1.6



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1.3. Text Conventions



Danger – This information MUST be followed or catastrophic equipment failure or bodily injury may occur.



Caution or Warning – Alerts the user to important points about integrating the module, if these points are not followed, the module and end user equipment may fail or malfunction.



Tip or Information – Provides advice and suggestions that may be useful when integrating the module.

All dates are in ISO 8601 format, i.e. YYYY-MM-DD.

1.4. Related Documents

Please refer to the Applicability Table for the supported Telit GNSS modules.



2. Installation of TelitView

For each type of receiver, please refer to the Applicability Table for the supported Telit GNSS modules in order to install the applicable USB drivers and connect the receiver to the PC.

2.1. Downloading

Go to the Telit Download Zone <http://www.telit.com/download-zone/>.

After Log In: Click on Software > GNSS > Software tools

Download the latest Windows Installer Package file: TelitViewInstall_x_x_x.msi

2.2. System Requirements

Microsoft .NET Framework 4.0 or later.

If a user wants to determine which version of .NET Framework is installed in his computer, he can follow these procedures:

1. On the Start menu, in the search box, type: regedit

You must have administrative credentials to run regedit.exe.

2. In the Registry Editor, open the following sub key:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\NET Framework Setup\NDP

The installed versions are listed under the NDP sub key. The version number is stored in the Version entry. For the .NET Framework 4, the Version entry is under the Client or Full sub key (under NDP), or under both sub keys.

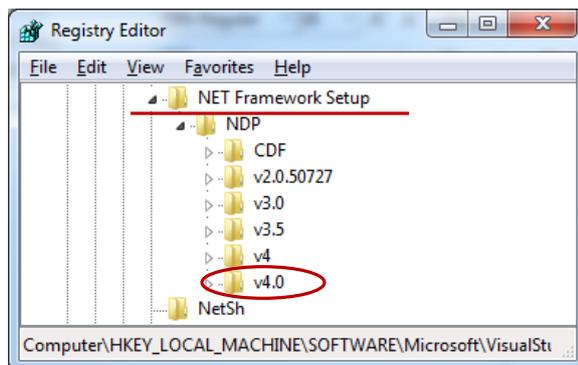


Figure 1 Registry Editor



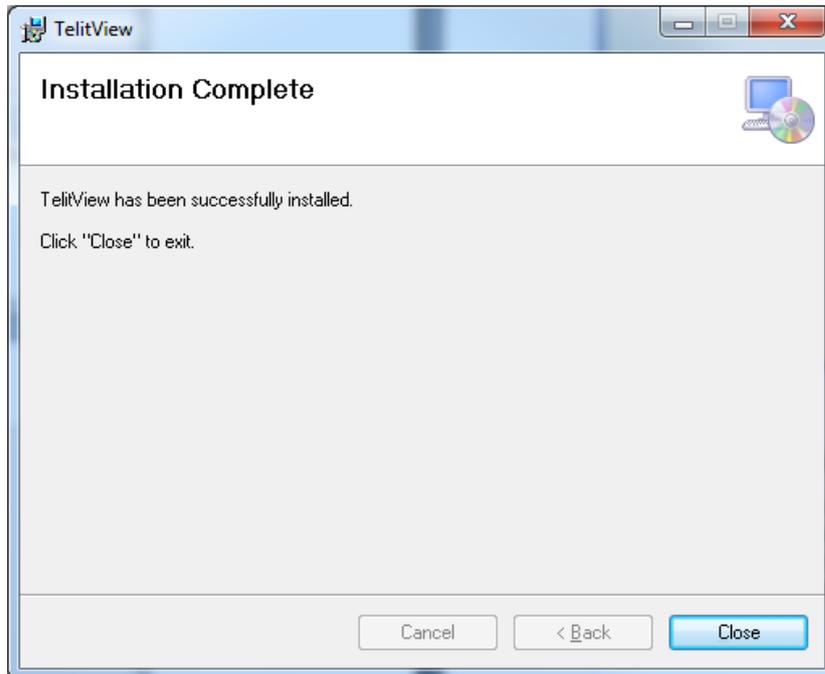


Figure 5 Installation Complete

- Close.

Like a typical Windows desktop application, the installer has just installed the TelitView application into the computer and it can be launched from the “Start” menu.

Typically the program is installed under

“C:\Program Files (x86)\TELIT\TelitView x.x.x” folder (x.x.x is the version id).

The executable file name is “TelitView_x_x_x.exe”.

Find the application and double click on it to launch the program in the default placement.



3.2.1. Make Connection

From the dropdown list:

- Select the correct COM port connected to a GPS receiver.
- Select the correct baud rate.
- Select the type of Telit module connected (optional, see below).
- Click “OK”.

If the port is selected and the baud rate is set correctly, TelitView program will show the serial data activities on the screen, as well as the data plots in its open windows.

The status bar will show the current communication state: “Connected [COMxx, Baud xxxx]”, as indicated by the following figure.

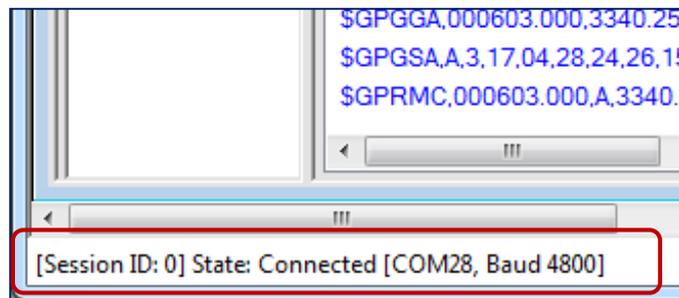


Figure 9 COM port communication state (with the current Session ID)

3.2.2. About Telit Module Type

This selection is optional if the user is connecting the COM port to a receiver and only wants to see receiver’s data output activities as they are displayed on the view windows. A module type of any selection is not a requisite on the purpose of monitoring the data on views.

The default type of “NON-SPECIFIC” indicates that no particular module type has been selected.

- **When must a module type be selected?**

After setting up connect, if the user plans to send commands to the module, he has to have the Telit module type specified correctly, because all commands are module specific. In those cases, the module must be a specific type that corresponds to the module connected, other than “NON-SPECIFIC” type. User can make the selection either from this dialog box or from the menu selection for the product type, as described in **Section 4.1 Setup Menu**.



Other situations when a module type needs to be selected include when the user wants to view data associated with the type of satellite constellations. For example, if the user wants to see TelitView display GLONASS, BeiDou information in the signal view windows, a correct type of module needs to be specified for the target, as the output for those data is generated differently by different chipsets.

3.2.3. Status Bar

Located at the bottom left corner is the status bar. The status bar shows the current connection status of the COM port, such as the

- Connection state: connected, disconnected, or no connection
- COM port parameter: port name and baud rate (when the port is connected)

The status also shows additional information as related to the connection, such as a Session ID. Please refer to **Section 7.7.2 Sessions & Connection Profiles** for more details about the Session.



4. Introduction to Menus and Toolbar

4.1. Setup Menu

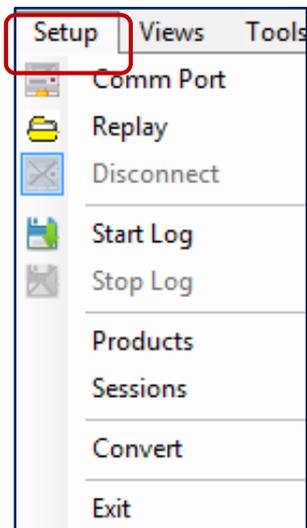


Figure 10 Setup Menu

The Setup Menu includes the following entries and their functions accordingly:

- **Comm Port**

Launches the “Connect to Receiver” dialog box to configure the COM port parameters and to the receiver connected to the COM port as the data source.

- **Replay**

Launches a File-open dialog box and allows the user to select and replay a pre-recorded data file (in a standard NMEA data format) as the data source.

- **Disconnect**

Disconnects the data source which is either the serial port or the replay of the log file.



4.2. Views Menu

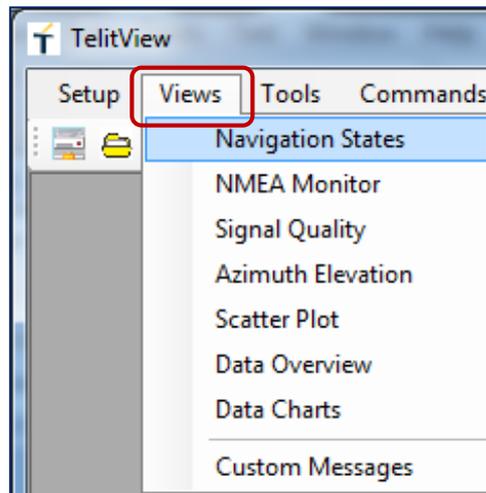


Figure 11 Views Menu

The Views Menu entries are the launching commands for the following windows:

- **Navigation States**

The display of the navigation data in a form of list on the second-epoch update basis.

- **NMEA Monitor**

The primary “Console” to control (sending command messages) and monitor the messages constantly received by TelitView.

- **Signal Quality**

The display of the signal strength of satellites (GPS / GNSS) as they are received by the receiver, in dbHz.

- **Azimuth Elevation**

The display of the satellite in view in terms of their azimuth and elevation, and their usage status at the epoch.



- **Scatter Plot**

The display of the position / navigation tracks in the 2D adjacent plot, as well as the navigation status updates on the error estimate.

- **Data Overview**

The display of navigation data in a tabular form with rows and columns, providing extended overview of the status and calculations on the second-epoch basis.

- **Data Charts**

The display of time-sequence of navigation data, in the parameters such as SVs in use, HDOP, Latitude, Longitude, Altitude (HAE), etc.

- **Custom Messages**

Custom configurable message window that allows user to adjust settings to display the received messages to be monitored.



4.3. Tools Menu

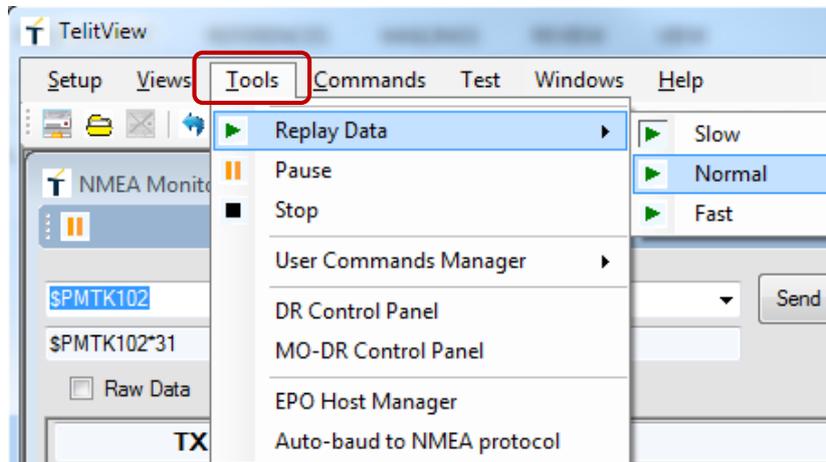


Figure 12 Tools menu

The Tools menu entries are the built-in tools in TelitView.

The current implemented features include controls that are used when TelitView is being used like a data player, or “replay” mode.

The features also contain entries that link to various tools that allow users to run different kinds of specific control and monitor tasks, as well as user specific command management provision.

- **Replay Data**

This is a set of control commands that enables the replaying of a log file at different speeds.

While the speed control on replay is implemented under this Tools menu, opening a log file and closing it are implemented under Setup menu.

- **Pause**

This control has dual operations – to “pause” or to “resume”. It is enabled during both types of data source – COM port serial data or the replay of a log file.

- **Stop**

This control stops a Replay.



- **User Commands Manager**

The provision allows the user to load a User Commands File that is product specific XML file, and manage the User Commands contained in the file.

User may access this menu for the following operations:

- Add new user command, using the “New/Modify” submenu
- Load the user commands, using the “Load User Commands to Menu” submenu

Please refer to **Section 7.4 Create and Maintain Commands Files** for more detailed information.

- **DR Control Panel**

This menu brings up the Dead Reckoning (DR) control panel used as DR control and display console. It is used for DR specific testing and monitoring.

- **MO-DR Control Panel**

A positioning system of MEMS-DR is referring to a GNSS + DR system that uses the Micro-Electro-Mechanical Systems (MEMS) sensors to provide a combination of data to assist in position fix or continuous navigation. These data may include signals such as accelerometers, magnetometers, gyroscopes, and barometers that commonly found in motor vehicles.

This menu brings up the MEMS only DR control panel used as DR control and display console. It is used for MEMS specific testing and monitoring.

- **EPO Host Manager**

The EPO stands for Extended Prediction Orbit – a type of server-generated extended ephemeris developed and supported by Mediatek®. This feature is added to support Telit GNSS modules whose features are Mediatek® chipset specific.

This menu brings up the EPO Host Manager. This is a product specific tool used to manage the EPO feature provided in SL869-V2 (or other Telit GNSS modules that use devices from Mediatek Inc®).

- **Auto-baud to NMEA Protocol**

This menu launches TelitView’s auto-baud rate detection feature in an attempt to detect the baud rate that the GNSS module currently runs to the PC COM port.



4.4. Commands Menu

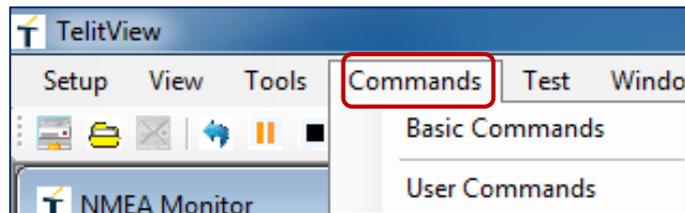


Figure 13 “Commands” menu

The Commands menu entries contain two types of the command sets:

- **Basic Commands**

These commands are provided as the built-in commands by TelitView, from the relevant XML file installed during the installation process.

- **User Commands**

These commands are created and maintained by the user, and by nature are custom created and customer specific to meet testing and control purposes for the customer.

Please refer to **Section 7.4 Create and Maintain Commands Files** for more details.

4.5. Test Menu

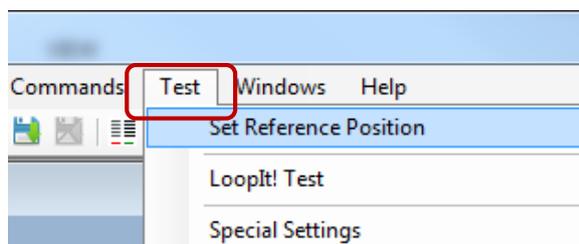


Figure 14 "Test" menu

The Test menu entries contain the following commands specific to functions of running tests.

- **Set Reference Position**

Launches a dialog box that allows the user to configure TelitView to use a position as a reference. The position is specified in the form of Latitude, Longitude, and Altitude values.

Please refer to **Section 7.5 Configure Reference Position** for more details.



- **LoopIt! Test**

TelitView provides this utility for users who wish to run a repeated TTFF test, with a test suite with configurable parameters to meet different testing needs.

- **Special Settings**

This menu leads to a dialog box that allows user to set up various testing flags or TelitView system special conditions or changes the default behavior of TelitView.

4.6. Windows Menu

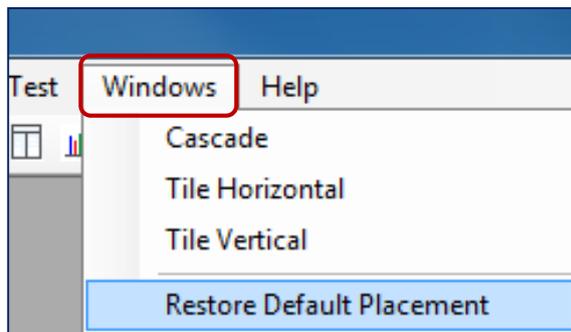


Figure 15 "Windows" menu

This Windows menu contains the commands for TelitView’s windows placement management.

- **Cascade**
- **Tile Horizontal**
- **Tile Vertical**
- **Restore Default Placement**

These commands and their actions are self-explanatory.

After installing the program and running it for the first time, placement of the windows in TelitView is persistent – TelitView will start with the placement from the last time the user exits the program.

The last command in this menu, “Restore Default Placement”, is provided for the user to restore the default placement.



Icon	Name	Functionality
	Comm Port	Launches a dialog box to configure a COM port, and open it (to connect it to the receiver).
	Replay	Launches an Open File dialog box and opens a log file, and replays it.
	Disconnect	Disconnects the current open data source, either the open COM port or open replay file.
	Rewind	Rewinds the replay file (to the beginning). This feature is enabled only in the data replay mode.
	Pause/Resume	Pauses / Resumes the display. This feature is enabled in either COM port or data replay mode.
	Replay stop and Play	Both icons share the same toolbar button. Replay stop is enabled when the program is in the data replay mode. When pressed, it is to stop the replay. Play is enabled when user pressed “Rewind” to direct the replay back to the beginning of the replay file, he may press this Play button to start to replay.
	Start log	Launches an Open File dialog box, and starts to log the data into a disk file.
	Stop log	Stops (closes) the log file that is open to save the data.
	Navigation status	Launches the “Navigation Status” window.
	NMEA Monitor	Launches the “MNEA Monitor” window.
	Signal Quality	Launches the “Signal Quality” window.



	Azimuth Elevation	Launches the “Azimuth Elevation” window.
	Scatter Plot	Launches the “Scatter Plot” window.
	Data Overview	Launches the “Data Overview” window.
	Data Chart	Launches the “Data Chart” window.
	Hot Reset	Command to send a “Hot Reset” message to receiver through the COM port. The actual message content is product-specific.
	Warm Reset	Command to send a “Warm Reset” message to receiver through the COM port. The actual message content is product-specific.
	Cold Reset	Command to send a “Cold Reset” message to receiver through the COM port. The actual message content is product-specific.

Figure 18 Toolbar icons and their functions



5.2.2. Time-To-First-Fix on Dead Reckoning (DR)

The following figure illustrates the navigation states values, along with a TTFF = 4.9 second. The Time to First Fix is on Dead Reckoning (vs GNSS broadcasting signals, for instance).

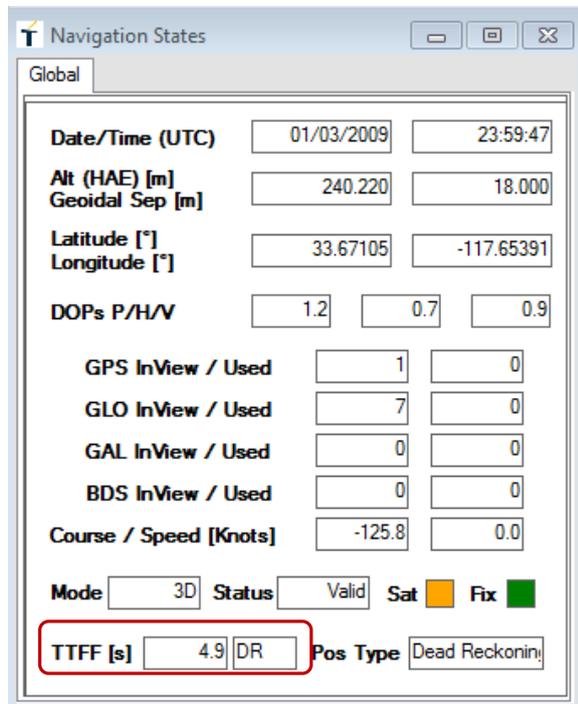


Figure 21 Navigation States window and TTFF with DR



5.3. NMEA Monitor

- Menu: Views > NMEA Monitor

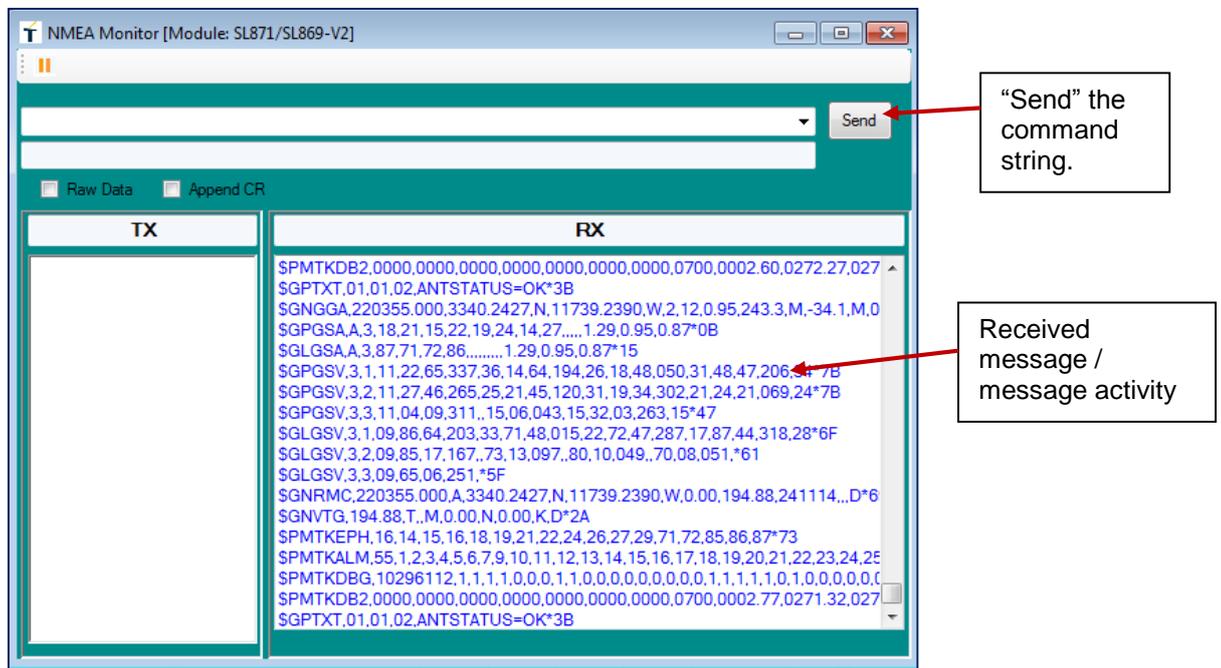


Figure 22 NMEA monitor view

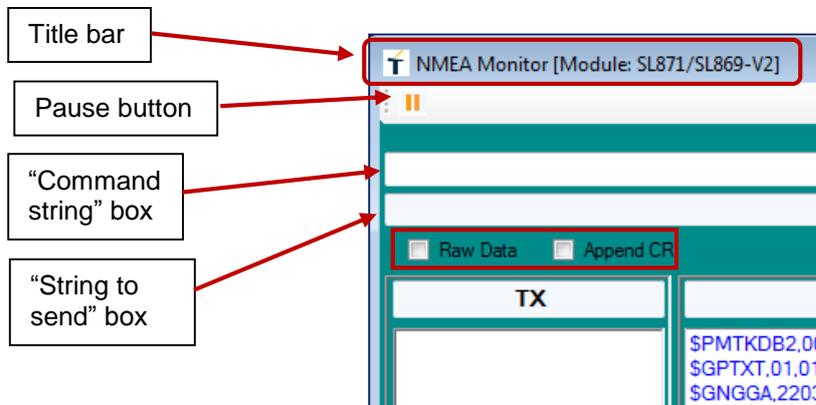


Figure 23 NMEA monitor controls and fields



5.3.1. Controls on the Window

The NMEA Monitor contains a collection of text boxes and two panes.

- **The title bar:**

When the user specifies a product type (i.e. SL869, JN3, etc.), the type name will appear on this title bar, and the color scheme of the panel frame will change as an indicator that a product type has been selected by the user for the current connection.

- **The “Command string” box:**

This is the text box where the user types in the command string to send to the receiver. The text string that appears on this box contains the command string, and any parameters considered a part of the command string. Other characters such as hex representation of the checksum, will not be displayed in this box.

Besides manual typing of the user, the data into this box can come from other methods (described in the sections that follow) before a particular message is to be sent.

- **The “Pause” button:**

User can click to toggle between pause and resume of update in the views of this window.

Note: Anytime the “Pause” button on the main form toolbar is clicked to “resume” from “pause”, the “pause” of this button is released as well.

- **The “String to send” box:**

When a command string is displayed in the “Command string” box, TelitView will attempt to calculate appropriate checksum and append it to the string in real-time. The command string, along with the calculated checksum, will be displayed in this “String to send” box.

By design, the default command string is a NMEA sentence-like messages, the message format contains checksum at the end and separate from the message body by “*”. So normal use will see the “\$”, “*”, and a 2-bytes the checksum value.

TelitView automatically adds a checksum to the command being sent.

- **The “RX” pane:**

This large “List Box” style pane is the “receiving” monitor that displays the NMEA messages (both standard and proprietary) as TelitView receives them, either from the COM port serial data, or from a replay of a log file.

To provide the user with a good visibility to the data traffic and context information, every command string sent from this panel is also displayed in the RX pane.



- **From the “Basic Commands” or “User Commands”:**

When the user selects one of the commands either from the “Basic Commands” or “User Commands” (by clicking the command), the action will place the command string in the “Message” box.

- **Copy-Paste from the Clipboard:**

The user can elect to copy a string from any source – to the clipboard – then paste it onto the “Message” box.

- **Grab Message for Custom Messages Window**

As described from the Custom Messages Window, if the user would like to have received messages displayed in the Custom Messages window, the user needs to enter the message header as a filter to the Custom Message setting.

One of the ways to supply such a message is to “grab” it from the NMEA Monitor’s “RX” pane.

While the Custom Message window is open, the user may click the "Pause" button to pause the display, and locate a particular message to add it as a target message header, and then double-click on the message string. TelitView will grab the message and trim it to make a message header, and place it onto the “Message setting” box.

5.4. Signal Quality

This window below displays the tracking states and signal quality of the satellites in CNo (dBHz.)

- Their SVIDs and signal levels in the Signal Quality Chart view
- The GNSS source, SVIDs, satellite states and other real time parameters
- The elevation and azimuth information in the Azimuth Elevation view
- GLONASS satellites are shown in the circle.



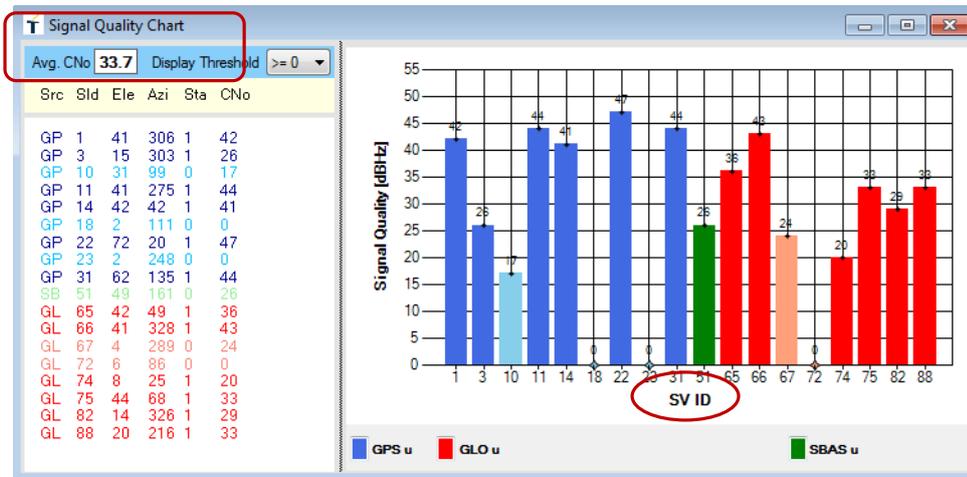


Figure 24: Signal quality view: GPS signal and satellite states

With GNSS receiver that supports GNSS (GPS, GLONASS, Galileo, BeiDou, etc.); the Signal Quality view will display the satellite constellation and the states information accordingly.

Refer to the **Section 9.1 Display Examples of GNSS Signal** for more examples.

5.4.1. Signal Level Bar Chart

The right side of figure above illustrates the following information:

SVIDs that are tracked and used. SVIDs are shown along the X-axis, and for GPS constellation signals, the Space Vehicle ID (SVID) range is 1 through 32.

- Signal quality
The signal level for each satellite is shown as the attitude of each bar, along with its CNo value (dBHz).
- Satellite Usage Flag
“GPS Used” marker will be present if there is at least one satellite has the state of “1” – the satellite is being used for a position fix.



5.4.2. Satellite Tracking States

The left side of above figure illustrates the following information:

- Source name (“Src”). This name can be the combination of the following:
 - “GP” – GPS,
 - “GL” – GLONASS,
 - “GA” – GALILEO,
 - “BD” – BEIDOU,
 - “SB” – SBAS
 - “QZ” – QZSS

- Other satellite state information:
 - Satellite ID (“Sid”) – SVID, the same as in the Signal Level Bar Chart
 - Elevation (“Ele”) – the elevation of each satellite
 - Azimuth (“Azi”) – the azimuth of each satellite
 - State (“Sta”) – the state of the satellite: “1” indicate the satellite is used in solution.
 - CNo – Signal CNo numbers; it is the same as the bar height in the Signal Level Bar Chart on the right side.

5.4.3. Additional Information Control and Display

- **Average CNo:**

This box displays the average CNo value from all satellites that are in view on the current update.

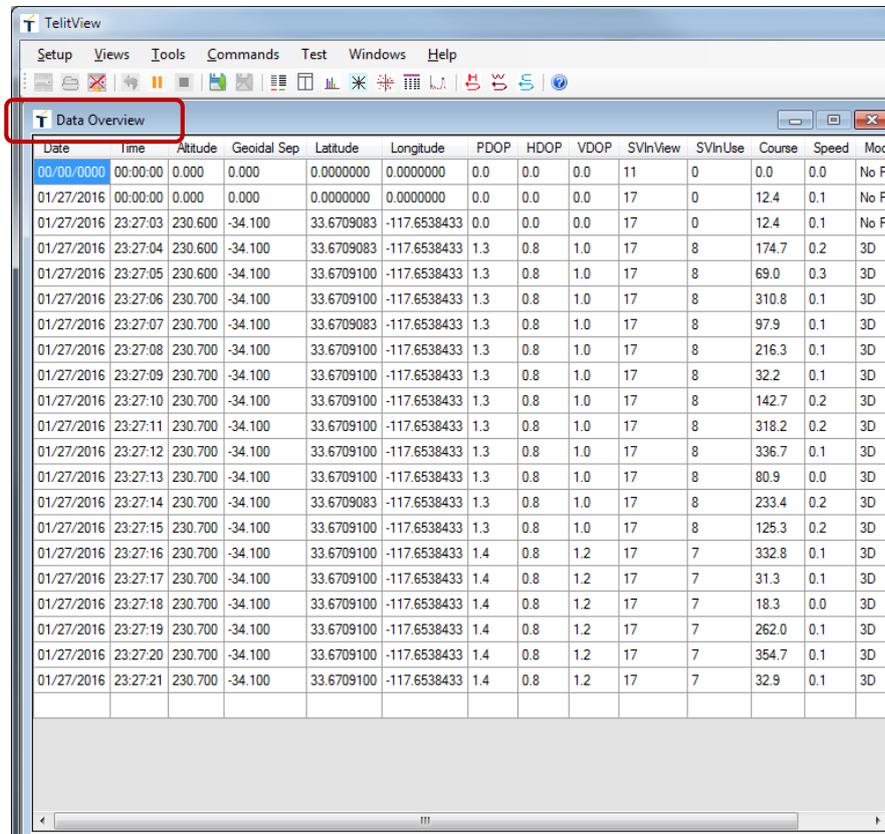
- **Display Threshold:**

This is a user selectable control to adjust how he would like the satellite information to be displayed by selecting the minimum value for the signal CNo.



5.7. Data Overview

The Data Overview monitor displays an overview of some GNSS data:



Date	Time	Altitude	Geoidal Sep	Latitude	Longitude	PDOP	HDOP	VDOP	SVInView	SVInUse	Course	Speed	Mod
00/00/0000	00:00:00	0.000	0.000	0.00000000	0.00000000	0.0	0.0	0.0	11	0	0.0	0.0	No F
01/27/2016	00:00:00	0.000	0.000	0.00000000	0.00000000	0.0	0.0	0.0	17	0	12.4	0.1	No F
01/27/2016	23:27:03	230.600	-34.100	33.6709083	-117.6538433	0.0	0.0	0.0	17	0	12.4	0.1	No F
01/27/2016	23:27:04	230.600	-34.100	33.6709083	-117.6538433	1.3	0.8	1.0	17	8	174.7	0.2	3D
01/27/2016	23:27:05	230.600	-34.100	33.6709100	-117.6538433	1.3	0.8	1.0	17	8	69.0	0.3	3D
01/27/2016	23:27:06	230.700	-34.100	33.6709100	-117.6538433	1.3	0.8	1.0	17	8	310.8	0.1	3D
01/27/2016	23:27:07	230.700	-34.100	33.6709083	-117.6538433	1.3	0.8	1.0	17	8	97.9	0.1	3D
01/27/2016	23:27:08	230.700	-34.100	33.6709100	-117.6538433	1.3	0.8	1.0	17	8	216.3	0.1	3D
01/27/2016	23:27:09	230.700	-34.100	33.6709100	-117.6538433	1.3	0.8	1.0	17	8	32.2	0.1	3D
01/27/2016	23:27:10	230.700	-34.100	33.6709100	-117.6538433	1.3	0.8	1.0	17	8	142.7	0.2	3D
01/27/2016	23:27:11	230.700	-34.100	33.6709100	-117.6538433	1.3	0.8	1.0	17	8	318.2	0.2	3D
01/27/2016	23:27:12	230.700	-34.100	33.6709100	-117.6538433	1.3	0.8	1.0	17	8	336.7	0.1	3D
01/27/2016	23:27:13	230.700	-34.100	33.6709100	-117.6538433	1.3	0.8	1.0	17	8	80.9	0.0	3D
01/27/2016	23:27:14	230.700	-34.100	33.6709083	-117.6538433	1.3	0.8	1.0	17	8	233.4	0.2	3D
01/27/2016	23:27:15	230.700	-34.100	33.6709100	-117.6538433	1.3	0.8	1.0	17	8	125.3	0.2	3D
01/27/2016	23:27:16	230.700	-34.100	33.6709100	-117.6538433	1.4	0.8	1.2	17	7	332.8	0.1	3D
01/27/2016	23:27:17	230.700	-34.100	33.6709100	-117.6538433	1.4	0.8	1.2	17	7	31.3	0.1	3D
01/27/2016	23:27:18	230.700	-34.100	33.6709100	-117.6538433	1.4	0.8	1.2	17	7	18.3	0.0	3D
01/27/2016	23:27:19	230.700	-34.100	33.6709100	-117.6538433	1.4	0.8	1.2	17	7	262.0	0.1	3D
01/27/2016	23:27:20	230.700	-34.100	33.6709100	-117.6538433	1.4	0.8	1.2	17	7	354.7	0.1	3D
01/27/2016	23:27:21	230.700	-34.100	33.6709100	-117.6538433	1.4	0.8	1.2	17	7	32.9	0.1	3D

Figure 27 Data overview

5.8. Data Chart

Data Chart window provides user selection control for several displays for some useful information. The information display that have been implemented include the following:

- Average CNo
- Altitude (HAE)
- Speed
- HDOP
- Number of satellite in use
- Number of satellite SV in view
- Latitude
- Longitude



5.9. Custom Messages Window

TelitView supports different kinds of products / modules that are offered by Telit GNSS in a unified user interface. The Custom Messages window is a configurable message window for convenient and flexible interface to customize TelitView's message handling windows.

In this window, the user is provided with flexibility to customize different messages display by adding messages as the message filter. The messages received by TelitView from the data source will be displayed in this message window, in addition to the regular NMEA Monitor window.

In addition, the user can also remove messages from the settings list to reduce the message traffic into the window.



6. Introduction to Tools Menu

The Tools menu contains the built-in tools in TelitView.

6.1. Replay of Data

The TelitView “replay of log file” feature carries out the following actions:

- Open a log file that contains the log data from earlier runs,
- Parse the data for valid messages, a.k.a. NMEA messages, and
- Display and update the view window with the result from parsing, as TelitView would from receiving the messages through COM port.

The “Replay Data”, “Pause”, and “Stop” buttons have the same functionalities as the buttons on the toolbar, respectively.

6.1.1. Open Log File for Replay

The access to open a log file is implemented in the Setup menu.

- Menu: Setup > Replay

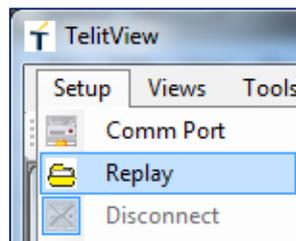


Figure 31 Log file replay

After user has entered a valid location for the log file for replay, TelitView will locate the file, open, and start to replay the messages contained in the log file.



6.1.2. Control the Speed for Replay

➤ Menu: Tools > Replay Data

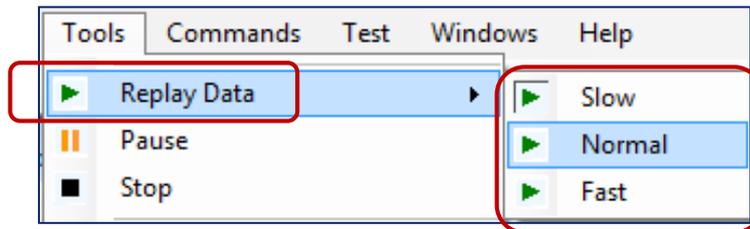


Figure 32 Tools menu

The replay speed is selectable with the following three options:

- Normal – the same speed as the original data update rate.
As the default, the replay file is read (on the second basis) all NMEA messages before the next GPRMC message. And the screen is updated accordingly.
- Slow – the replay will be run at a half speed as in the Normal speed.
- Fast – the replay will be run at a various speed based on how the “Fast” is selected.
With respect to the Normal speed, the first “Fast” will replay the file at twice speed. Another click on “Fast” will result in the replay at 10 times as fast. This is the maximum speed for the file replay.

6.1.3. Pause and Resume

User clicks “Pause” button to toggle pause or resume replay.

6.1.4. Stop Replay

User clicks “Pause” button to stop replay.



6.2. User Commands Manager

TelitView provides a highly flexible and user-friendly tool in the context of User Commands File. This feature allows user to create user-defined commands, in the format of text strings, in a XML file, and store these commands in a XML file. User can then load the commands into TelitView and send a command string with a click on the command to a receiver.

- Menu: Tools > User Commands Manager > Load User Commands To Menu

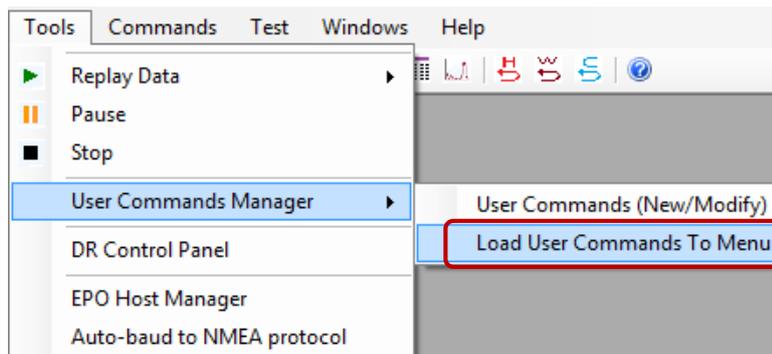


Figure 33 User Commands Manager

For more complete and detailed information about the User Commands File, including loading and editing, etc. with User Commands (New/Modify) menu as shown in figure above, please refer to the **Section 7.4 Create and Maintain Commands Files**.

6.3. DR Control Panel

- Menu: Tools > DR Control Panel

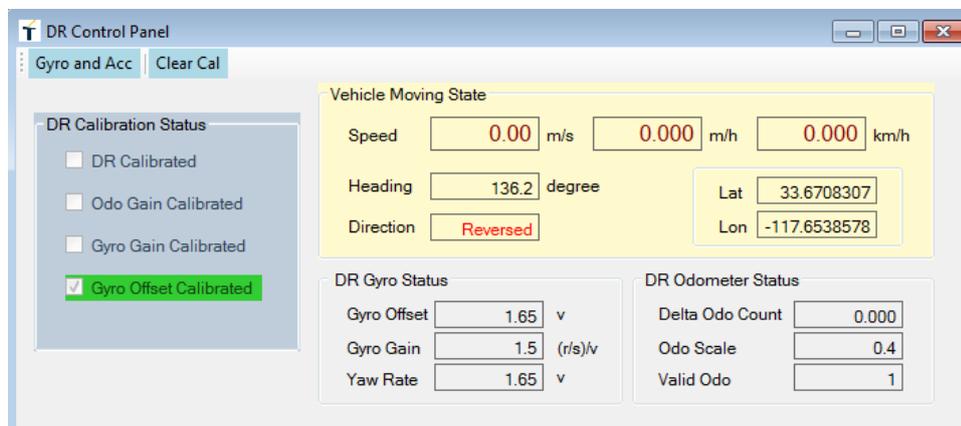


Figure 34 DR Control Panel



The DR (Dead Reckoning) Control Panel is the start point for user to monitor receiver’s output data, send commands as they are pertaining to receiver’s DR specific states, status, and performance related data.

6.3.1. Controls and Data Panes

The panel consists of the following panes

- **Toolbar:**
 - “Gyro and Acc” button: to bring out the Gyro and Accelerometer panel
 - “Clear Call” button: to send a command to clear the DR calibration.
- **Data panes:**

DR Calibration Status: indicates the calibration status bits for the following DR variables of calibration:

- DR
- Odometer gain
- Gyro gain
- Gyro offset

Vehicle Moving State: indicates some variables of vehicle moving states such as the following:

- Speed (including meter/second, mile/hour, and kilometer/hour)
- heading
- direction (forward or reversed)
- Latitude and Longitude as reference

DR Gyro Status: indicates some variables of Gyro status such as the following:

- Gyro offset
- Gyro gain
- Yaw rate

DR Odometer Status: indicates some variables of vehicle Odometer Status such as the following:

- Delta odometer count
- Odometer scale
- Odometer valid flag



- **The “Pause” button:**

User can click to toggle between pause and resume of update in the views of this window.

Note: Anytime the “Pause” button on the main form toolbar is clicked to “resume” from “pause”, the “pause” of this button is released as well.

- **The Gyro, Accelerometer, and Odometer panes:**

This panel displays the updates of the following data in three panes respectively:

- DR Gyroscope
- DR Accelerometer
- Odometer

- **The bar charts for raw data from Gyro and Accelerometer:**

Two horizontal bar charts are implemented for the raw data of X, Y, and Z as defined in the Gyro and Accelerometer data, respectively. They provide the user graphics representations of the data updates as they come in.

If a hand-held receiver is used and maneuvered, the change of those variables are shown in the graphics.

6.3.3. Command to Clear DR Calibration

User can send a command to the receiver to cancel calibration by clicking the “Clear Cal” button on the toolbar DR Control Panel.

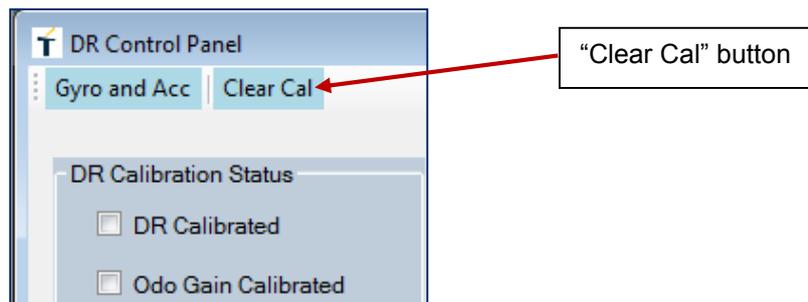


Figure 37 Clear DR calibration

The effect of this command is the DR calibration states in the receiver will be cleared. And this state changes can be seen from the output of the receiver.

If the DR calibration clear requires reset to the module, an information box will pop up to the user.

User will click “OK” to acknowledge the information, but determines whether or when he will reset the module, by sending a “Reset” command or conducting a power cycle.



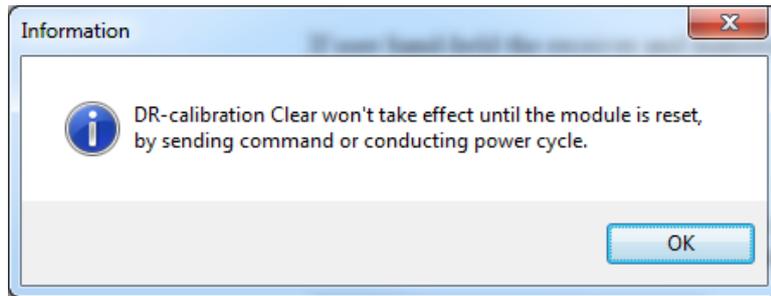


Figure 38 Prompt on Clear DR-calibration

6.4. MO-DR Control Panel

➤ Menu: Tools > MO-DR Control Panel

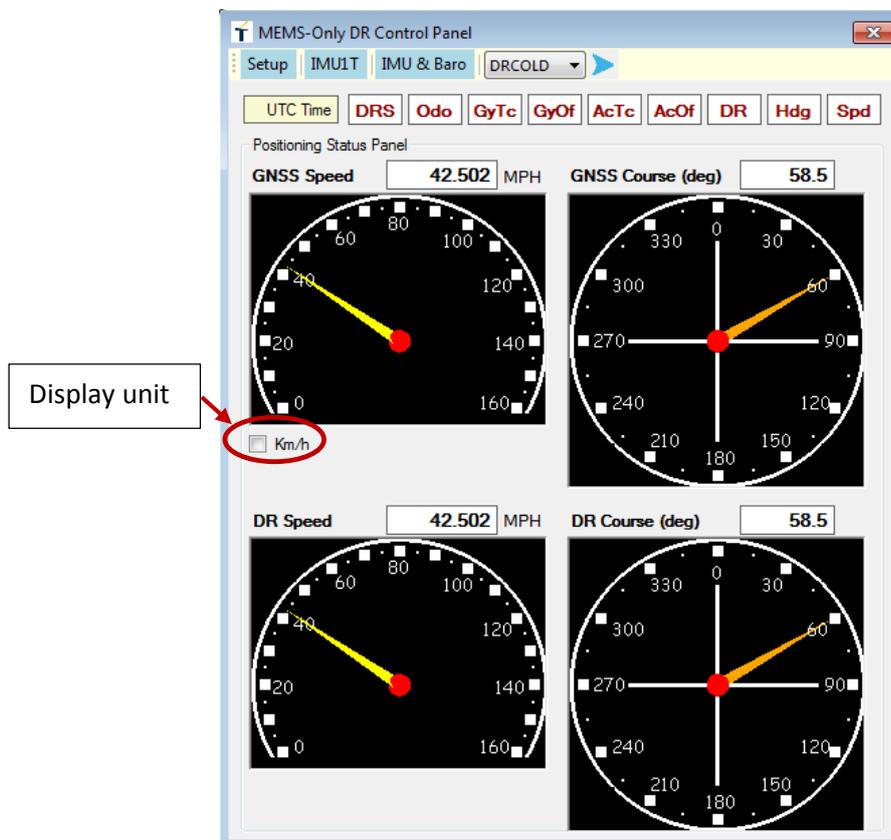


Figure 39 MO-DR Control Panel



6.4.1. MEMS-Only DR Menu Strip

In this control panel across the top of the panel is the menu strip with three menu buttons:



Figure 40 Menu strip on MEMS-Only DR Control Panel

These three buttons will be described as the following.

- **“Setup” button**

User can click this button to launch a MEMS-Only DR setup window, which has the capability to process relevant data to provide display that will help the installation – orientation and placement of the sensor.

- **“IMU1T” button**

IMU is referring to Inertial Measurement Unit that uses a combination of accelerometers and gyroscopes, sometimes also magnetometers.

User can click this button to launch a view window to display the data fields and the update of the Telit GNSS proprietary message “IMU1T”.

- **“IMU & Baro” button**

User can click this button to launch another view window to display the data fields and the update of the Telit GNSS proprietary messages “\$PTWSIMU, RAW” and “\$PTWSBARO, RAW”. They are the output data of IMU unit and the barometer unit.

- **MODR Command selector**

User may choose a command from the dropdown list to send to the receiver.

Currently supported commands include:

- DR Cold Restart: DRCOLD
- DR Factory Reset: FACTRST

- **Send Command Button**

Right next to the DR command selector is the “send command” button. User clicks it to send the chosen command to the com port.



6.4.2. Speed and Course Meters for GNSS and DR

This panel contains the analog meters to display the following:

- 1) GNSS Speed (in unit of MPH or Km/h)
- 2) GNSS Course in degrees
- 3) DR Speed (in unit of MPH or Km/h)
- 4) DR Course in degrees

The speed unit is selectable with the check box “Km/h”.

6.4.3. Navigation State Flags

The row of flags, which is located below the tool bar strip, illustrates the navigation state of the MEMS-Only DR, based on the output Telit GNSS proprietary message.



These status flags are defined as following, with the color code:

- “220014.000” – the current UTC time tag.
- “DRS” – DR sensor calibration status
 - White: none of the DR sensors is calibrated
 - Yellow: at least one sensor calibrated
 - Green: Calibration complete
- “Odo” – Odometer calibration status
 - White: Odo scale is not calibrated
 - Yellow: Calibration is progress
 - Green: Calibration complete
- “GyTc” – Gyro temperature calibration status
 - White: Gyro temperature is not calibrated
 - Yellow: Calibration is progress
 - Green: Calibration complete
- “GyOf” – Gyro offset calibration status
 - White: Gyro offset is not calibrated
 - Yellow: Calibration is progress
 - Green: Calibration complete
- “AcTc” – Accelerator temperature calibration status

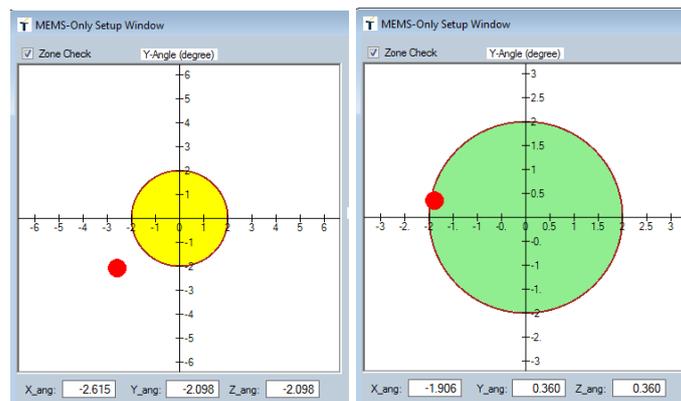


values are updated in real time as the module’s output data (IMURAW) is received and processed by the window.

The user can view the movement of the dot that follows the adjustment of the state (rolling, yawing, and pitching) of the sensor.

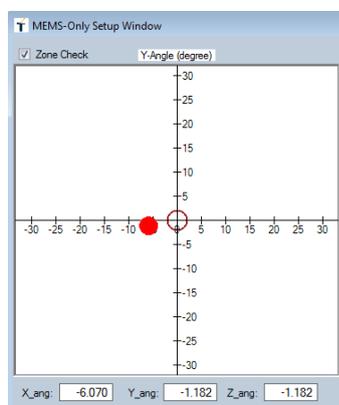
View of Sensor Placement and Adjustment:

As the sensor placement is adjusted, its position in the plot changes around.



The above screenshots illustrate how the plot is showing the orientation of the sensor, with the plot’s “auto zooming” feature.

- The sensor position starts from far outside of the “target zone”, which is defined as a pie with the radius of 2-degree on the X axis direction and 2-degree on the Y axis direction.
- As the sensor adjusts to a closer to the target zone, the target zone (the yellow color pie) appears.



- When the sensor adjusts and falls into the zone, the scale of the plot changes again, and the zone turns to be a green pie, with the red dot is within the zone.

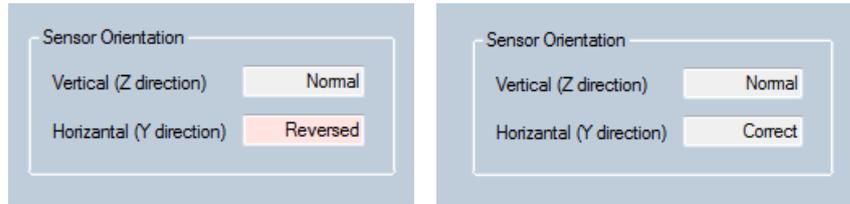
Stop of “Auto Zooming”

After the orientation of the sensor is optimized and settled, user may elect to “turn off” the “auto zooming” feature to avoid unnecessary data processing and updating to the plot by unchecking the “Zone Check” checkbox on the top-left corner of the plot.

View of Sensor Orientation

The following screenshots illustrate the orientation of a sensor with respect to the Y direction and Z direction.





6.4.5. IMU1T Data Display



Figure 42 MEMS IMU1T data panel

6.4.6. IMU Data and Barometer Data View

PTWSIMU,RAW data pane

This panel display the IMU data that contains the UTC time tag, IMU temperature reading, the gyro output data, and the accelerometer data.

PTWSBARO,RAW data pane

This pane display the UTC time tag, barometer temperature reading, and the barometer output data.



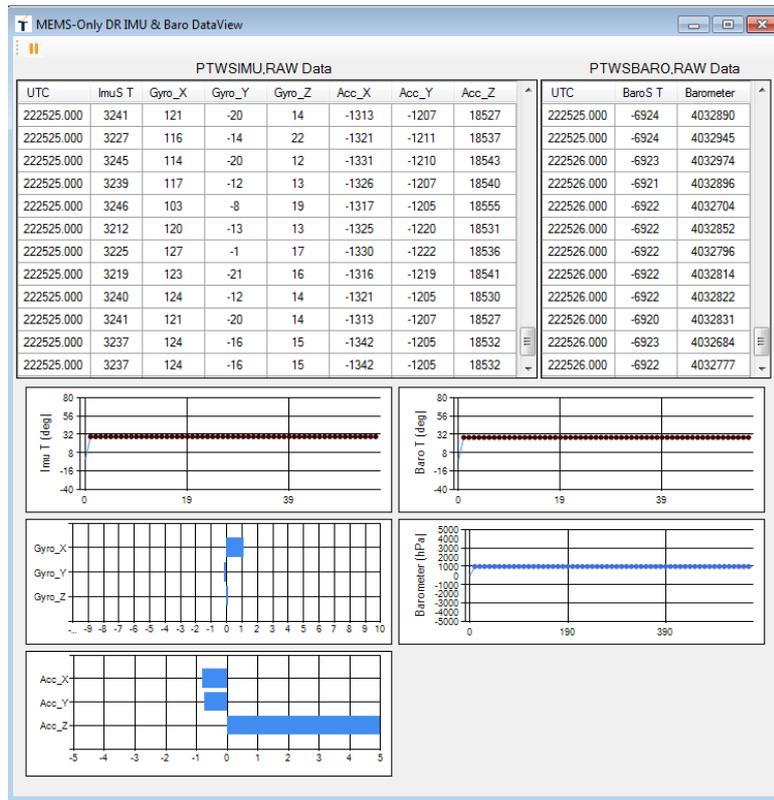


Figure 43 IMU and baro data view

Below the data listing of the IMU data and the barometer data are the graphs of the data:

- “Imu T (deg)” - IMU temperature reading
- “Gyro_X”, “Gyro_Y”, “Gyro_Z” – the output Gyro sensor data
- “Acc_X”, “Acc_Y”, “Acc_Z” – the output accelerometer sensor data
- “Baro T (deg)” – Barometer temperature reading
- “Barometer (hPa)”: the barometer reading



6.5. EPO Host Manager

- Menu: Tools > EPO Host Manager

The EPO Host Manager window provides all user interface and the controls the functionalities for the EPO feature.

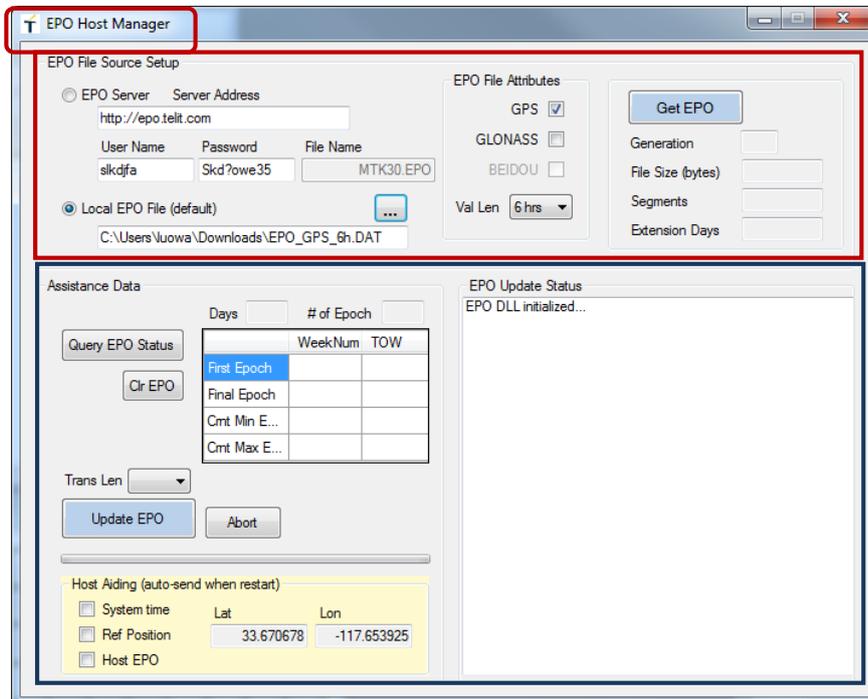


Figure 44 EPO Host Manager Window

The window is divided into upper half and lower half panes:

- The EPO File Source Setup to set up and get the EPO file
- The Assistance Data to transfer EPO and other assistance data to the client module



6.5.1. EPO File Source Setup

“EPO File Source Setup” pane in the upper half of the window:

- 1) Specify all necessary information, such as URL name, credentials, and EPO file selection to access a remote EE server, and download the file from the remote EPO server.
- 2) Alternatively, user can load from an EPO file that has been downloaded earlier and stored at a local media.

6.5.2. Get EPO

After a user selects an EPO source from above – either the remote EPO server with the user-entered credentials, or the local directory, he can click the “Get EPO” button to have EPO Host Manager go to the correct source location to load the file.

After the EPO file passed validation check and is loaded into a temporary memory, the basic information values will be displayed in the data pane, indicating the file size, segment, and extension days, and the file is ready to be transferred to the client module.

6.5.3. EPO Data to GNSS Module Transfer

There two methods of transferring EPO data to the client module:

- Use EPO-II method: “Update EPO” button transfers the EPO data to the client module
- Use Host-EPO method: Transfers the EPO data using a combination of
 - System time
 - Ref Position
 - Host EPO

The Host-EPO is initiated when a reset or power-up message is received by the host.

6.5.4. EPO Status Inquiry and EPO Clear

“Assistance Data” pane in the lower half of the window:

- Query EPO Status and Clear EPO

The buttons to query the current EPO-II state in the client module and clear the EPO data.



6.5.5. EPO Update Status Display

“EPO Update Status” pane in the lower half of the window:

- Displays the activities during the EPO transfer process (EPO-II and Host-EPO).

The detailed description can be found in Section 8.EPO Feature.

6.6. Auto-baud to NMEA protocol

This feature scans through different baud rate values (4800, 9600, etc.) and attempt auto-detecting the correct baud rate to make serial connection to the GNSS module’s UART port.

This feature can be used when the current baud rate is not known to user and would like to have TelitView to auto-detect it on the currently connected port.



7.1.2. Product List

The way the selection of a product has been changed; the list of modules has been enhanced from the last release of TelitView.

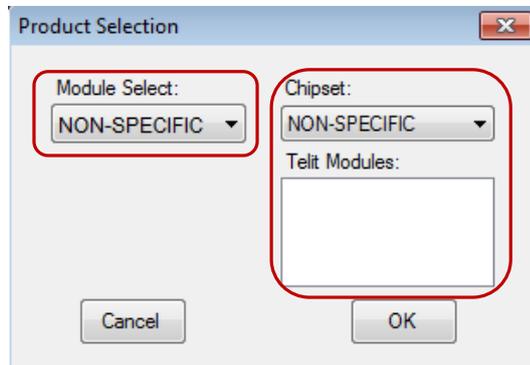


Figure 45 Product selection dialog box

There are two methods provided for the user to make selections:

- Module type – The names of Telit GNSS Modules (shown in the left side box).
- Chipset type – The names of the GNSS chipsets that are found in modules (shown in the right side box).

Note: The box area below the Chipset Type selector will list the modules that contain the chipset.



7.1.3. User's Select from Module List

If a user knows the module name, he can select it from the “Module Select” list.

All Telit modules will be listed under the “Telit Module” dropdown list, as shown.

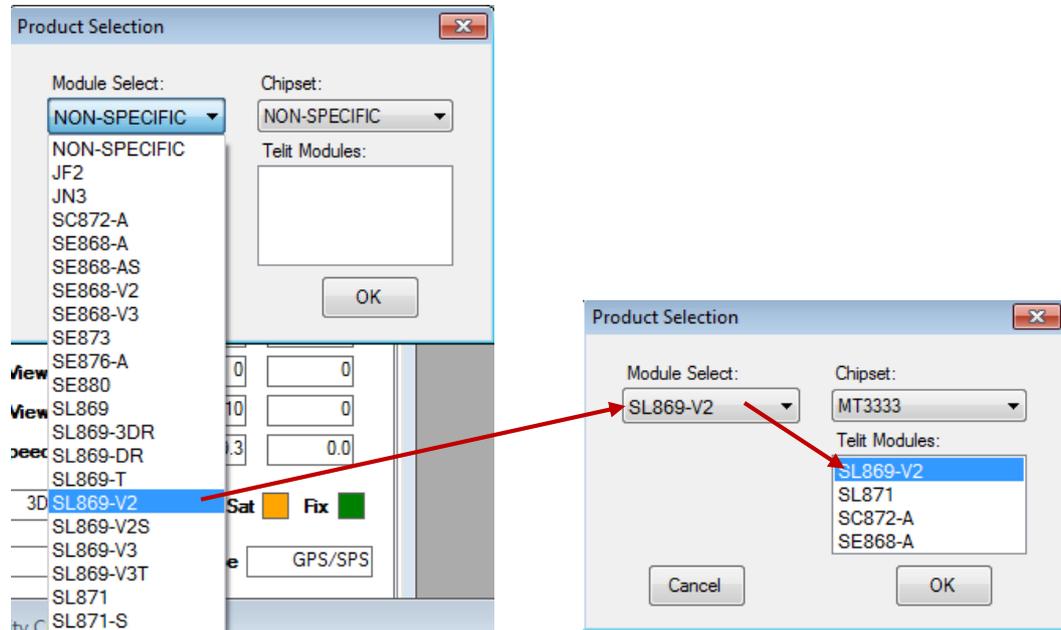


Figure 46 Product Selection

Anytime a module is selected (any module other than the “NON-SPECIFIC”), the corresponding chipset name, as well as all the modules in the chipset family will be displayed in the right side boxes.

In the above example, the selection of SL869-V2 module will bring up the chipset MT3333 in the “Chipset” dropdown list, as well as other member modules that contains the MT3333 device. In the list, the selected module, SL869-V2, is also highlighted.

User may click “OK” to complete the product selection.

7.1.4. User's Select from Chipset List

If a user chooses to start from a chipset name, he would choose a chipset from the “Chipset” list.

All chipset types will be listed under the “Chipset” dropdown list, as shown below.



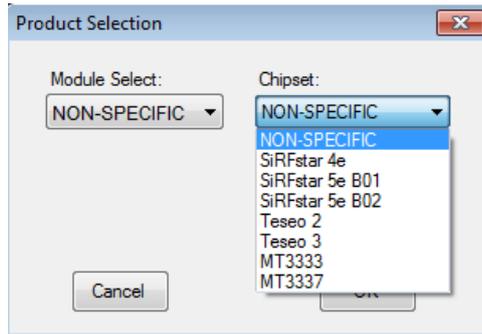


Figure 47 Chipset list

Anytime a chipset type is selected (any type other than the “NON-SPECIFIC”), the corresponding chipset name, as well as all the modules in the family based on the chipset will be displayed.

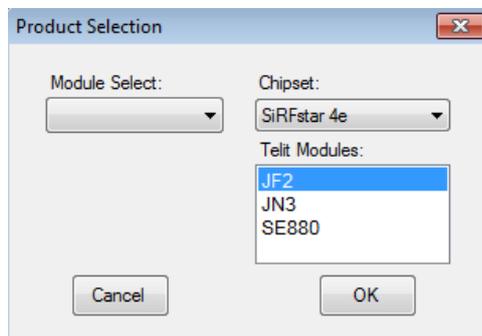


Figure 48 Modules under a chipset selection

In the example below, the device “SiRFstar 4e” is selected in ”Chipset” dropdown list, the selection will bring out the module names that are in the same chipset, as shown : JF2, JN3, and SE880.

Notice that “Module Select” field is empty and it requires user to make a selection from the member modules under the Chipset.

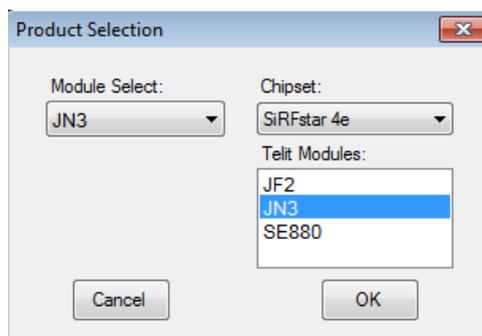


Figure 49 A Telit Module is selected based on chipset



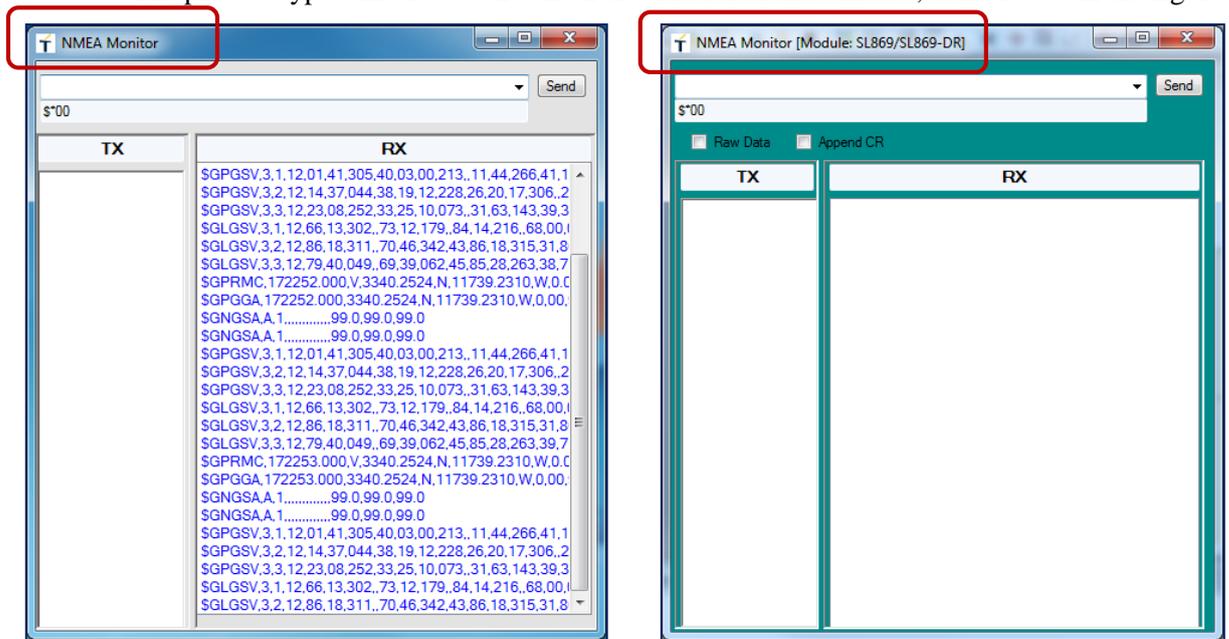
Once user clicked the selection, (i.e. “JN3”), the “Module Select” field will be populated with the module name, as shown in the figure.

User may click “OK” to complete the product selection.

7.1.5. What is expected from the Product Identification

The “NMEA Monitor” view is the primary interface the user interacts with the GNSS receiver connected to TelitView. The product selection will trigger the NMEA Monitor to change its frame color if the window is already open.

The product type will also be shown on the title bar of the window, as indicated in the figure.



The main form title bar will be updated with the product identifier as well.

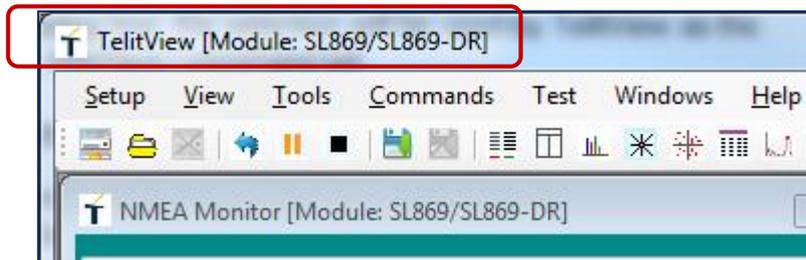


Figure 50 NMEA Monitor before and after a product selection



If the NMEA Monitor is launched after the product has been selected by user, the later opened window will also have the frame color changed.

Once the product selection is made, the command set is automatically loaded into the program that is product-specific for use.

The command set is available under the menu Commands > Basic Commands.

Note: It is the user’s responsibility to make sure when commands and run tests are sent, the correct product type (module name) is identified to the program.

7.2. Log Data to Files

➤ Menu: Setup > Start Log

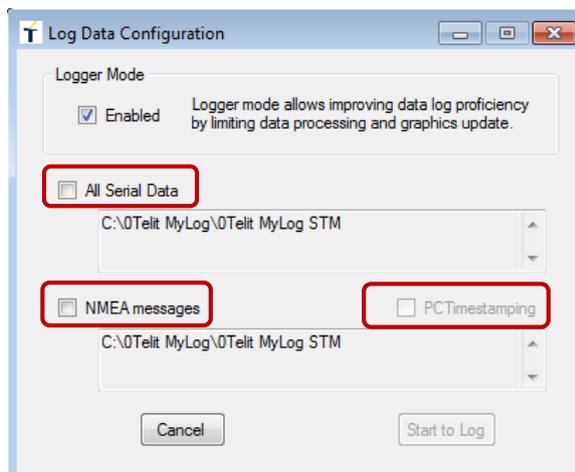
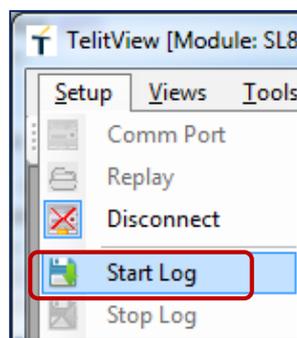


Figure 51 Log data configuration dialog box



7.2.1. Log File Types

Data of input / output at the COM port can be logged into disk files in two ways, with the following selections:

1) All Serial Data

When selected, this file type records the data as byte stream, which means the data can be text lines that include the standard NMEA as well as the proprietary NMEA messages.

The data can also be any binary data bytes that are often used for debugging purpose. Because this type of data does not conform to any standard known to TelitView, TelitView does not examine data and distinguish the contents, rather simply records them into a file.

2) NMEA messages

When selected, this file type will record the data that conforms to the NMEA standard - sentences starting from a '\$' character and ending with a valid checksum after a '*' character.

The two log file names (with paths) are set separately; they are not allowed to share the same file name in the same directory.

7.2.2. Logger Mode

Logger mode is provided to help minimize the possibility of data loss in situations where a high data density is present at the com port. When a module produces the output of high volume of data per second, it requires extended time of PC to process data and perform graphics update in real time.

The data save with minimal data loss, if any, can be helped if user elect to close all windows that he does not need to view data on, and only leave the necessary windows open.

When the Logger mode is selected, TelitView will limit data feed to the windows to minimize processing and graphics update, and allow the data to be saved into file in the maximum bandwidth that is offered by the PC.

The following windows still get data feed, thus updates, if user elect to leave them open:

- NMEA Monitor Window
- Signal Quality Window
- DR Control Panel
- MO-DR Control Panel

When a data logging is on under the logger mode, the data log icon will have a background of special color, as shown below:



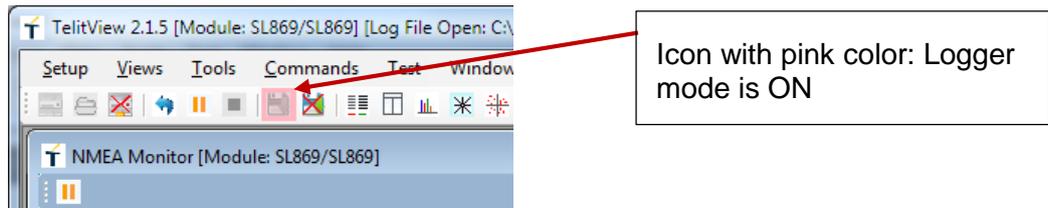


Figure 52 Logging data with Logger mode ON

7.2.3. PC Time stamping

This feature allows a user to insert a timestamp mark to each message (NMEA sentence) that is logged in the file type of NMEA message.

The following examples show the effect of PC time stamping.

```
$GPGSA,A,3,15,18,27,19,21,24,22,14,,,,,1.15,0.81,0.82*04
$GLGSA,A,3,88,65,81,87,66,,,,,,1.15,0.81,0.82*1D
$GPGSV,3,1,10,22,64,322,29,14,56,193,30,18,52,042,33,21,51,112,34*74
$GPGSV,3,2,10,51,49,161,31,27,47,275,25,19,30,308,26,24,21,076,19*7D
$GPGSV,3,3,10,15,11,043,18,04,03,308,*7E
$GLGSV,3,1,09,88,72,213,19,65,53,007,18,66,44,275,28,81,38,324,29*6E
```

Figure 53 Log file with no timestamping

```
13:46:17:565,$GPGSA,A,3,15,18,27,19,21,24,22,14,,,,,1.14,0.80,0.81*07
13:46:17:565,$GLGSA,A,3,88,65,81,87,66,,,,,,1.14,0.80,0.81*1E
13:46:17:566,$GPGSV,3,1,10,22,64,327,38,14,59,193,28,18,51,045,33,21,49,115,28*70
13:46:17:566,$GPGSV,3,2,10,51,49,161,30,27,47,272,30,19,32,306,28,24,21,074,24*71
13:46:17:567,$GPGSV,3,3,10,15,09,043,16,04,05,309,16*79
13:46:17:568,$GLGSV,3,1,09,88,69,207,23,65,51,010,30,66,45,279,32,81,41,322,21*60
```

Figure 54 Log file with timestamping

Note: This feature is only available for the log file type of NMEA messages.



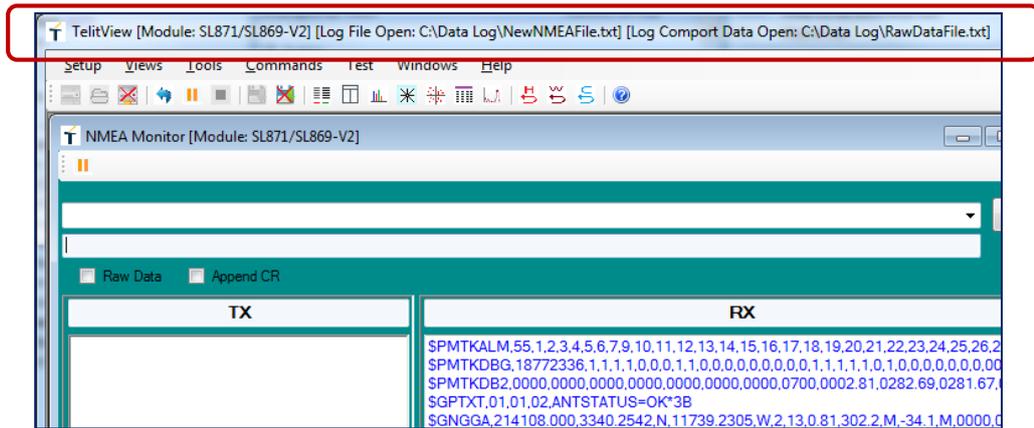


Figure 55 Title bar shows the status of logging file

7.2.6. Stop Log

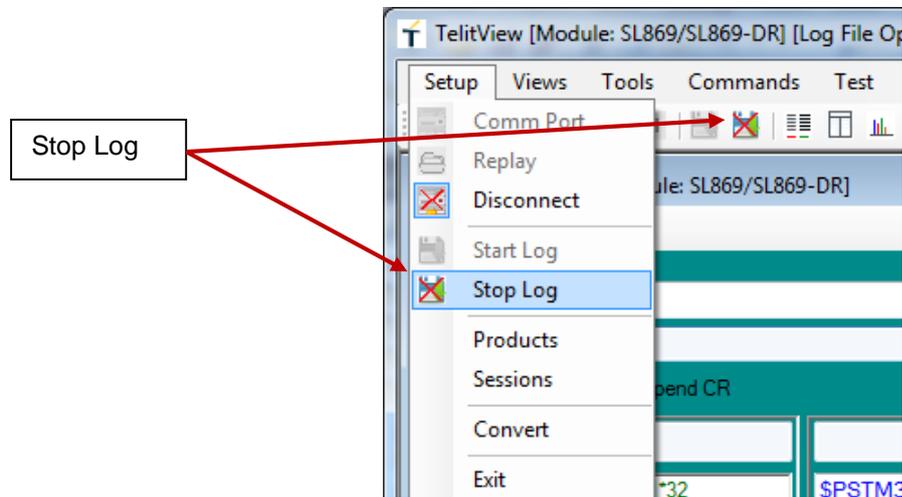


Figure 56 Stop log

User can click the “Stop Log” button either from the “Setup” menu or the icon on the toolbar, to stop logging process.

After data logging is stopped, the title bar in TelitView will display the updated logging status; showing that the log files are closed.



7.3. Configure Message Headers for Customized Display

7.3.1. Message Header

A messages header is defined as the first field of a text line received by TelitView from its data source. The “first field of the” text line is defined as the text present before the first comma “,” encountered in the received text line.

The user should only use the first part of a text string, before the first comma, as the message identifier for the program to parse and display. TelitView will not parse the text line as a whole for this purpose.

7.3.2. Add Message to Settings

The user may use one of the following methods to add a message header to the window as the settings:

1. Manual typing
2. Typical “copy & paste” operation (from the Clipboard)
3. “Grab and enter” from NMEA Monitor window

If the user would like to set a particular message shown in the NMEA Monitor window and add it to the settings, the user can make the data traffic pause first, then “double-click” the message. The program will automatically grab that line, trim it to get the first field, and fetch it to the “Custom view message settings” field.

Note: The user needs to click “Add” button in order to set or enable this new message header to take effect.

Remove Message from Settings

The user can elect to remove a message from the settings by first select it from the list (to place it on the settings field), then click “Remove” button.

7.3.3. Persistence of the Settings

The settings, after configuration above, will be automatically saved. The same setting will be reloaded on the next launch of the program.



7.4. Create and Maintain Commands Files

TelitView provides methods to send commands or messages to connected receivers with extended flexibility.

These methods and flexibility are implemented with two text files in XML format:

- **Basic Commands**

This file contains contents created as the default, built-in by TelitView. They are product specific.

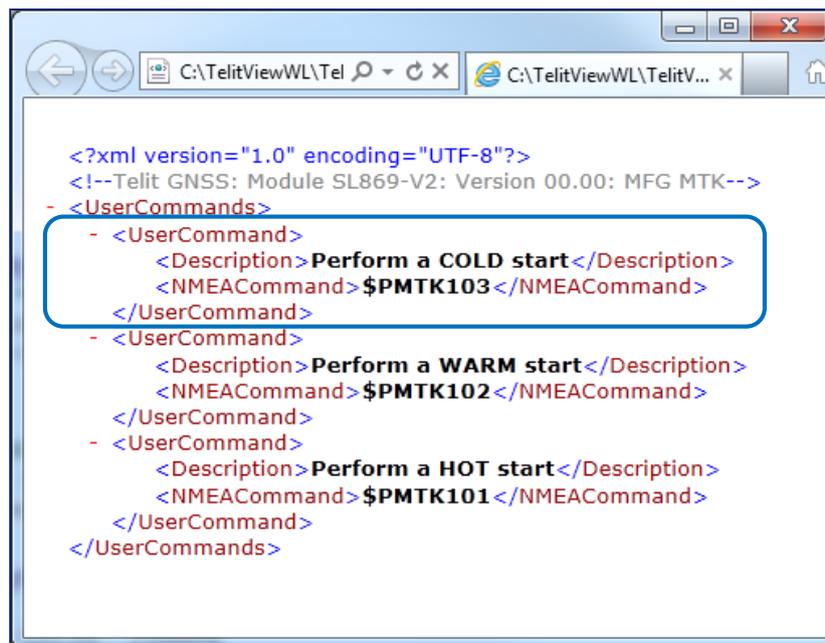
- **User Commands**

This file contains contents created and maintained by the user. They are custom created and product and customer specific to meets all kinds of testing and control purpose for the customer.

7.4.1. Contents of the Commands Files

Both Basic Commands file and the User Commands are in XML format.

The following is an example of how a command file looks like.



```

<?xml version="1.0" encoding="UTF-8"?>
<!--Telit GNSS: Module SL869-V2: Version 00.00: MFG MTK-->
- <UserCommands>
- <UserCommand>
  <Description>Perform a COLD start</Description>
  <NMEACommand>$PMTK103</NMEACommand>
</UserCommand>
- <UserCommand>
  <Description>Perform a WARM start</Description>
  <NMEACommand>$PMTK102</NMEACommand>
</UserCommand>
- <UserCommand>
  <Description>Perform a HOT start</Description>
  <NMEACommand>$PMTK101</NMEACommand>
</UserCommand>
</UserCommands>
  
```

Figure 57 Example of commands file



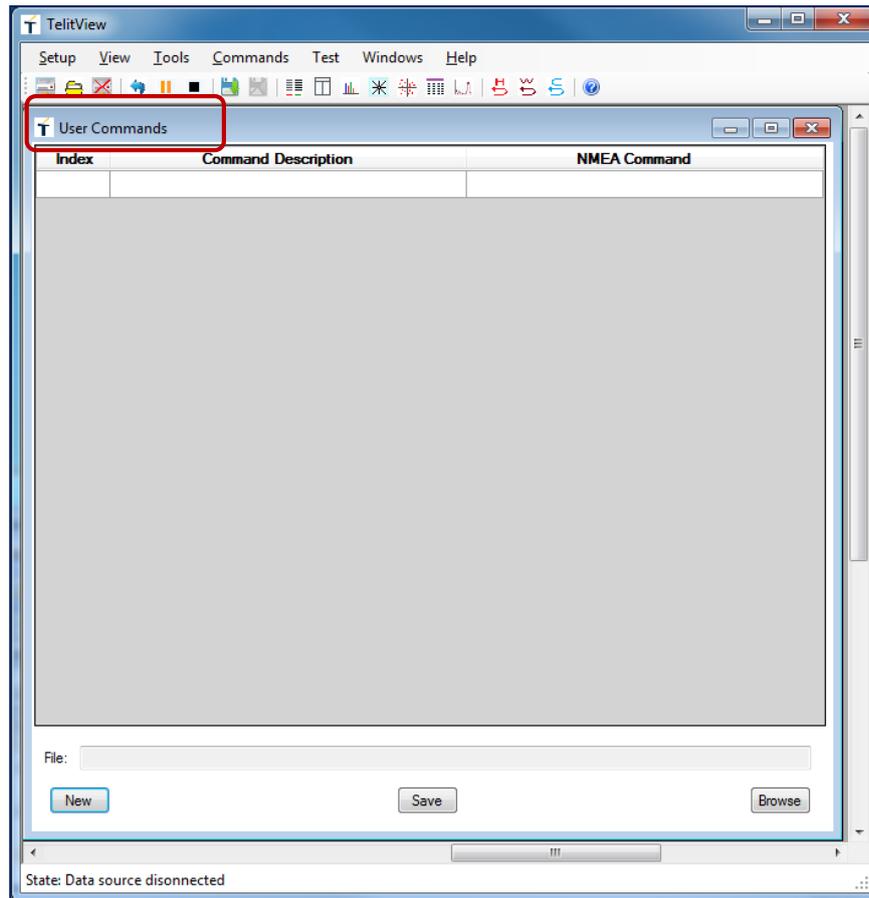


Figure 58 User Commands Editor

The User Commands window (or editor) provides the following boxes and buttons to enter / edit each user command entry, and save into a disk file specified by the user.

- User starts to create a user command by clicking the “New” button

For each entry of a user command, it has three fields:

3. “Index”:

An index count managed by TelitView.

4. “Command Description”:

A text string that serves as a descriptive title for the command. This command description appears on the user command list after the user elects to load them.

5. “NMEA Command”:

A text string for an actual command string (or sentence, message) sent to the receiver.



NMEA Command Syntax

These commands strings are proprietary NMEA messages – they start with “\$”, and may contain none or multiple delimiters “,” to separate each parameter fields if applicable.

Note: These command strings are the raw data only – they are not expected to include the checksum at the end of the command string here.

Save User Commands to the User Commands File

After the user creates the user commands, use the “Browse” and “Save” the commands to a disk file in a folder with a file name the user knows where to load from.

7.4.4. Access to Commands (Provided with Commands Files)

Load Commands

The Basic Commands file is loaded automatically by TelitView every time the user selects a product type from the “Product Selection” dialog box.

The User Commands file has to be loaded by user from a folder.

- Menu: : Tools >User Command Manager >Load User Commands to Menu

Access to Commands

The commands provided through the Basic Commands file and User Commands file are accessible in the same menu:

- Menu: Commands >Basic Commands
- Menu: Commands >User Commands

They are shown in the two figures below.



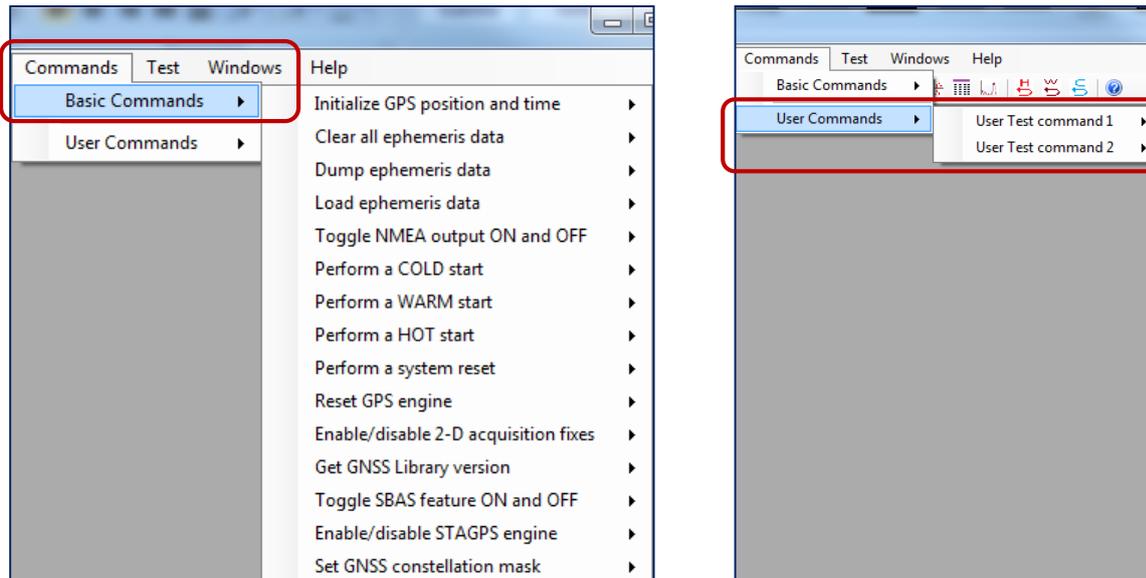


Figure 59 Access to commands

7.4.5. Send Commands

The Basic Commands and User Commands provide a flexible way for the user to create and use commands. Sending the commands across is implemented through the message “hub” for receiving / sending messages – that is, the NMEA Monitor window.

7.5. Configure Reference Position

A reference position is a position, specified as a set of Latitude, Longitude, and Altitude values used by the program as reference on which the Scatter Plot is drawn.

7.5.1. How to Configure TelitView to Use a Reference Position

- **Use First Position as the Reference**

As the default configuration, TelitView will use the first position fix (using GPGLA message it received as nominal) as the reference position. When its Scatter Plot is open and the axes are drawn on the window, the origin of the axes is positioned as the reference point.

- **Use a User Entered Position as the Reference**

Additionally, the user may elect to configure the program to use a reference position entered and saved.



7.5.2. Choose Whether to Use Reference Position for plot

If a reference position is available to the program, the “Info” panel in the Scatter Plot indicates whether the reference position is used or not.

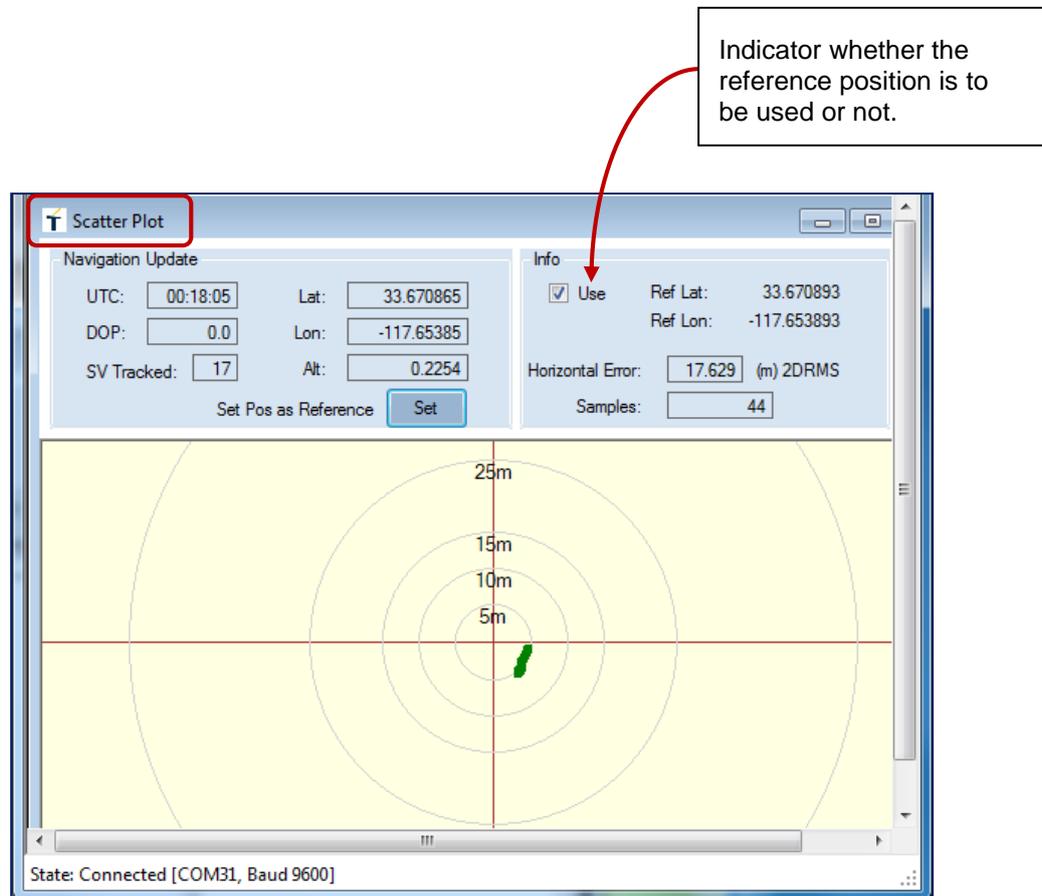


Figure 61 Use of reference position in Scatter Plot

First of all, the “Use” check box is a status indicator, showing whether the available reference position is being used or not. From the “Reference Position” dialog box, if the user has the checkbox of “Set to use now” checked and press OK, this checkbox is expected to show that.

The “Use” check box can also be used as a command to “set” whether to use the available reference position or not. By clicking it, the plot will toggle between using the reference position and not using it.

Note: Every time such a configuration occurs, the existing plot will be cleared and a plot will start over again.



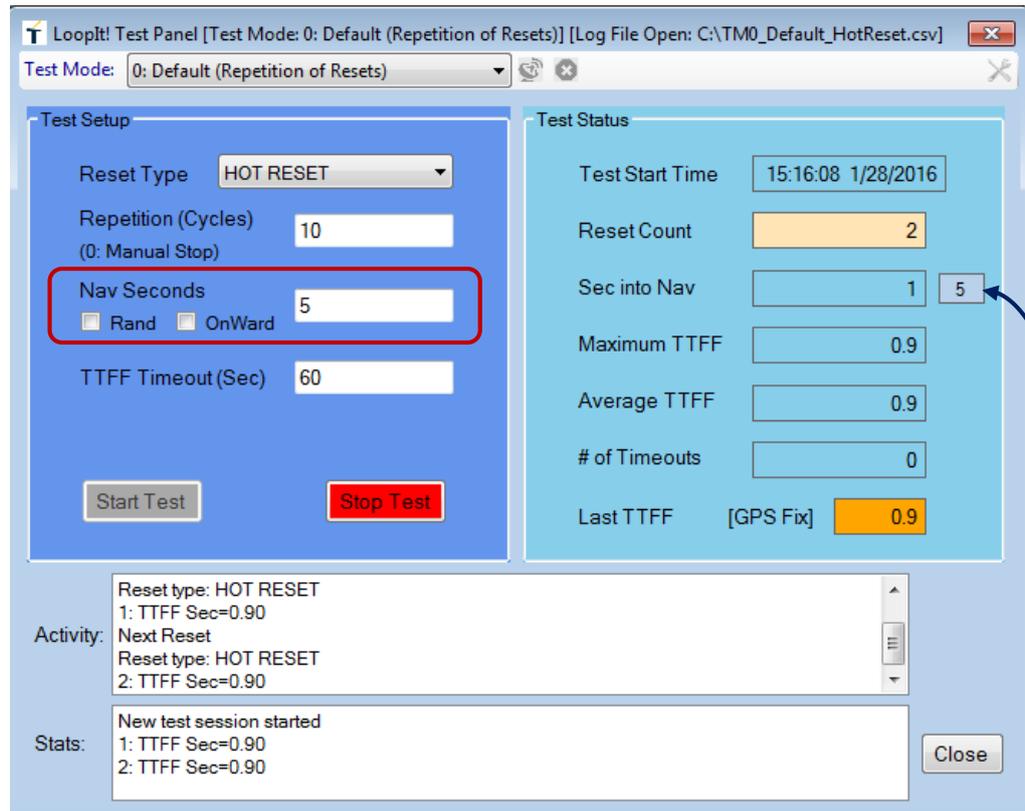


Figure 62 LoopIt dialog box

Delay sec for the current cycle

As seen from the left panel, the parameters include the following:

- **The test type**
- **Repetition (Cycles)**
- **Nav seconds**
- **Timeout (Sec)**

There can be other types of tests that can be developed, under different test modes, to support various testing purpose.



7.6.1. Insert Nav Seconds

User may insert some delay seconds after a position fix has been reached, before the next cycle of reset kicks in. This delay will not take place if the receiver is not in nav.

User may elect to use one of the three methods to insert the nav seconds:

- **The checkbox “Rand”:**

Inserts the delay seconds generated randomly by the program, with the range [0...30] seconds.

- **The checkbox “OnWard”:**

Inserts the delay seconds that goes in step onward, with the range [0...30] seconds.

- **The default**

Inserts the fixed value for the delay seconds specified in the “Nav Seconds” field.

7.6.2. TTFF Test Stats

Test result statistics can be seen on the right side panel, which includes:

- **Maximum TTFF**
- **Average TTFF**
- **The number of Timeouts**

The meaning of each parameter is self-explanatory.



7.7.2. Sessions & Connection Profiles

Access to the Session Configuration dialog box:

- Menu: Setup > Sessions

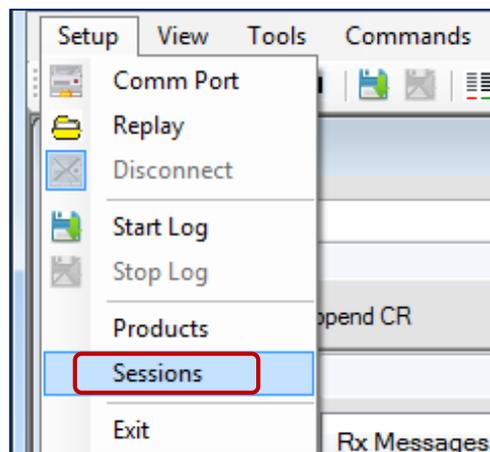


Figure 63 Launch the session feature

The Session Configuration Dialog Box

The Session and Connection Profile dialog box is illustrated in the figure below.



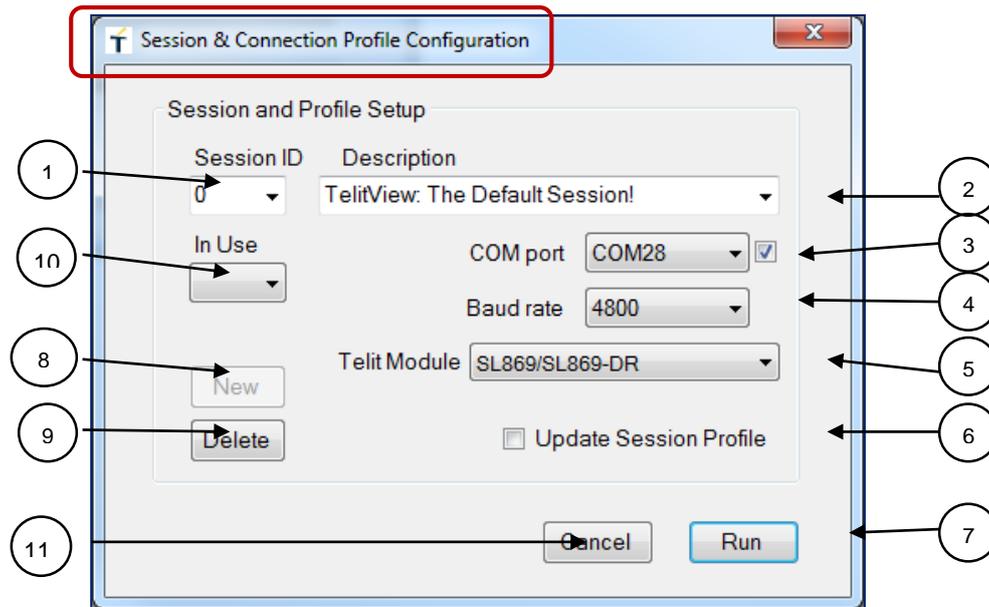


Figure 64 Session & Connection profile configuration

Fields of the Session and Profile

Refer to the Session Configuration dialog box, for the following fields:

1. Session ID:

A dropdown list and editable field to allow user to choose a session from the list, or enter a value as a new session ID to add.

2. Description:

An editable text field to allow user to write a brief description as a memo to indicate the key parameters for the session, the purpose, etc.

This field is also a dropdown list that contains the descriptions of the existing sessions that have been created by user, and they are available as reference.

3. COM port:

A list of COM ports found available on the machine.

User clicks the arrow key to select a port to be used for the session.

The checkbox on the right side of the COM port: a checked state is to indicate the port is available. A COM port can be defined in one or more sessions and it will be found in the list, but the port can be at a busy state at the particular time.



7.7.3. Examples of User Case

- A Single Instance Run at a Default Session (Session 0)

When running TelitView as a “single” instance (only one instance of TelitView is launched and running), the user does not need to do anything more for the similar situation.

- A Single Instance Run at a User-Created Session
- (Session 3)

The following figure illustrates scenarios that TelitView is running on a custom-created Session 3, as indicated at the TelitView status bar.

TelitView will use the setup parameters and windows placement data of the previous run of TelitView when it closes.

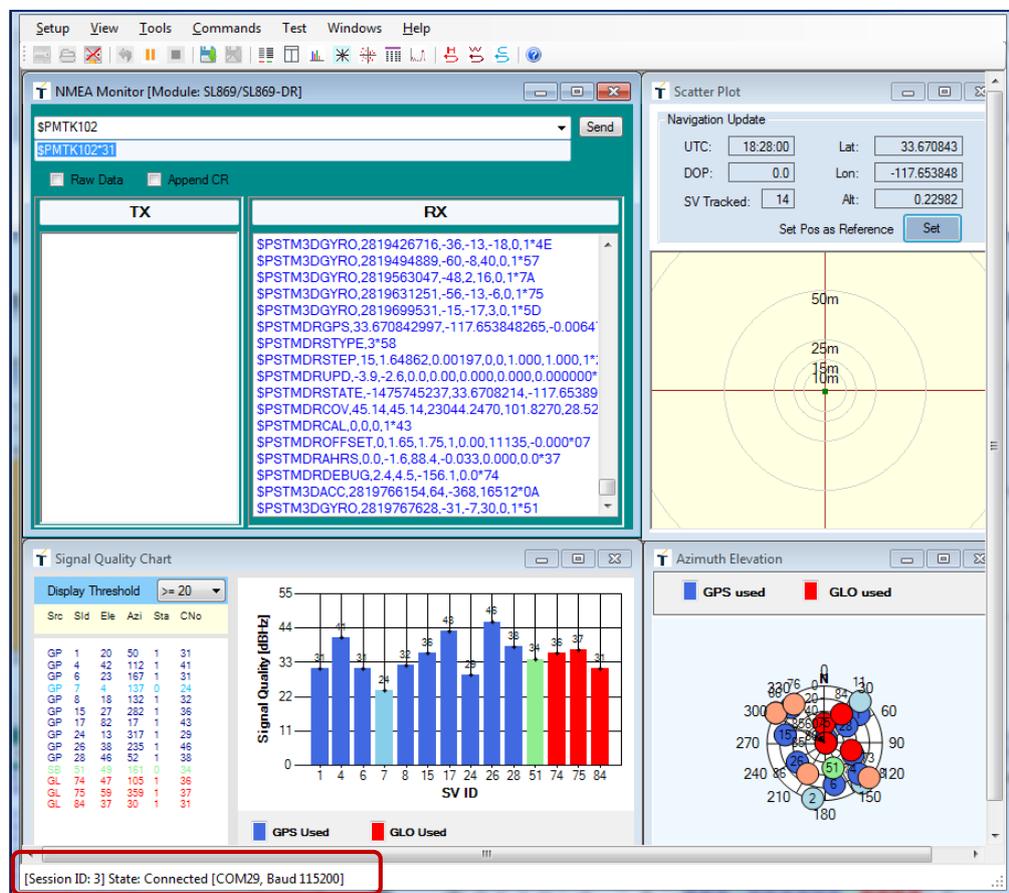


Figure 65 Single instance run of TelitView



- **Multiple Instance Runs (Different Sessions)**

Based on the session structure in multiple instance runs, creating different sessions is necessary.

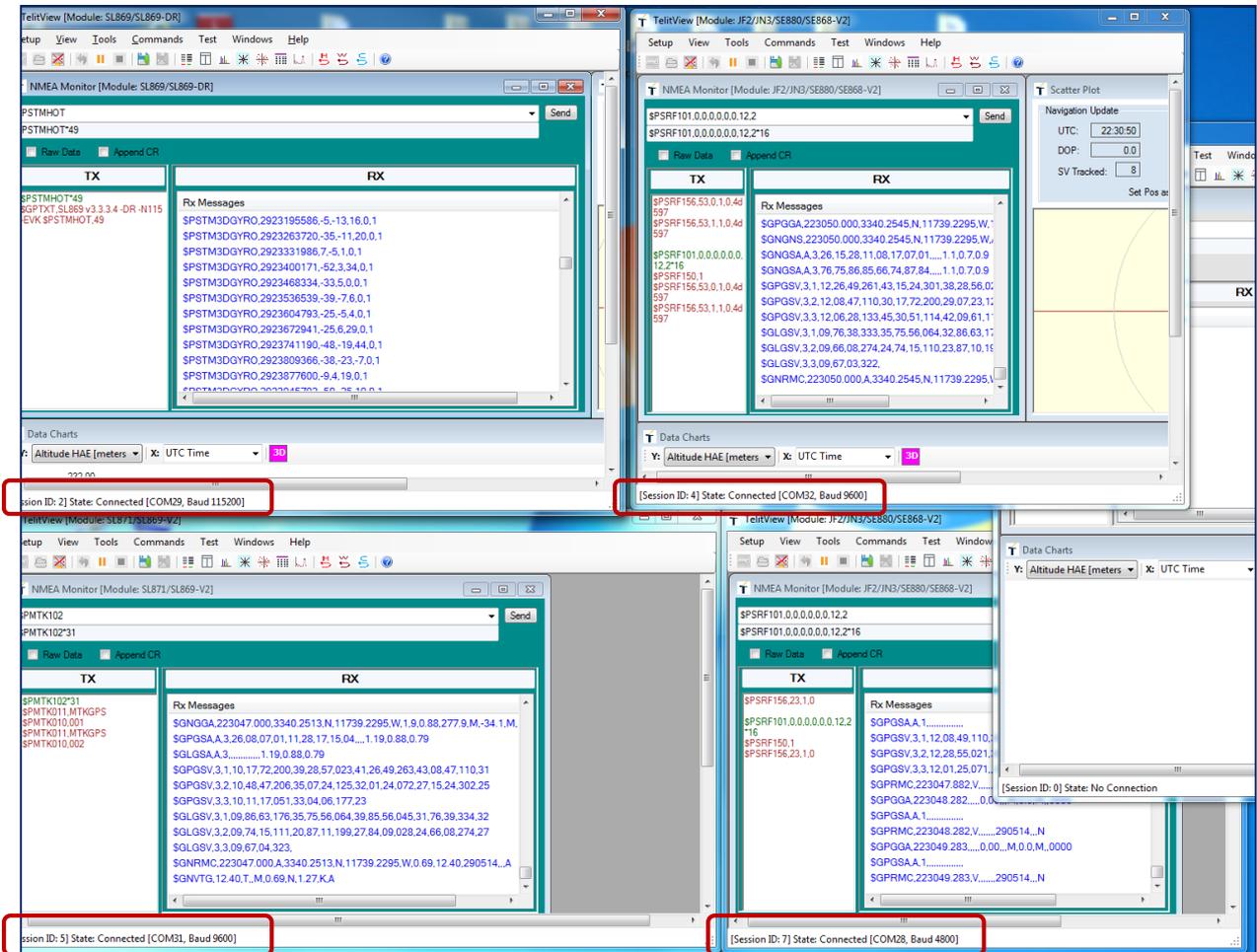


Figure 66 Multiple instance runs of TelitView



7.8. Convert Data File

7.8.1. File Conversion Dialog Box

➤ Menu: Setup > Convert

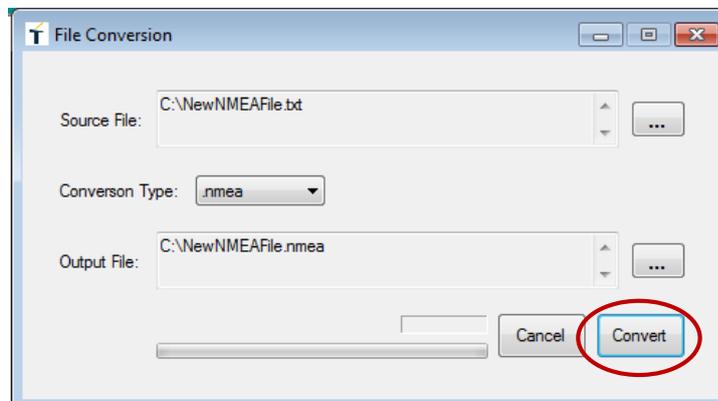


Figure 67 File conversion dialog box

7.8.2. Data Formats in File

- **Source File**

User browses or specifies the file path and name as the source file that TelitView will read from and the conversion is conducted upon.

The file format supported is expected to be a text format file that contains standard NMEA sentences, such as the NMEA file generated with TelitView as the data log file. In addition to the standard NMEA sentences, the source data file may contain other text messages or proprietary NMEA sentences, and they will be ignored by the conversion process.

If the log file generated by TelitView with the PC “timestamping” turned ON, the time stamp information will be ignored and the conversion will not be affected.

- **Conversion Type**

There can be various data types that conversions will gradually add and support. The selection is made through the pick on the “Conversion Type” dropdown list.

Currently, the supported conversion is to convert the standard NMEA sentences found in the source file into a NMEA format that is one of the data formats Google Earth will take as an input file.

- **Output File**

User browses or specifies the file path and name as the output file as a result of conversion.



7.8.3. Run Conversion

- **Convert File**

User clicks “Convert” button to start the conversion.

The conversion progress is illustrated by the progress bar, and on completion of conversion, the “Done” button will replace the initial “Cancel” button and user clicks it to exit from the dialog box.

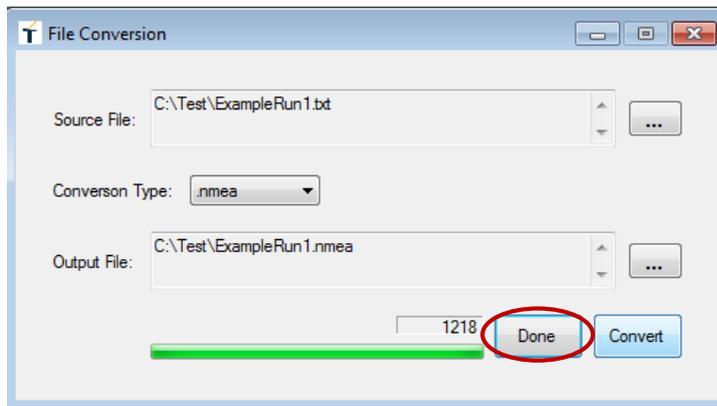


Figure 68 Convert file

The number of the NMEA sentences found in the conversion is also displayed in the dialog box (in this example, the number of sentences = 1218).

- **Display Tracks by Loading into Google Earth**

User can open the resultant file of NMEA format from Google Earth and have the navigation track displayed (only a part of display is illustrated).

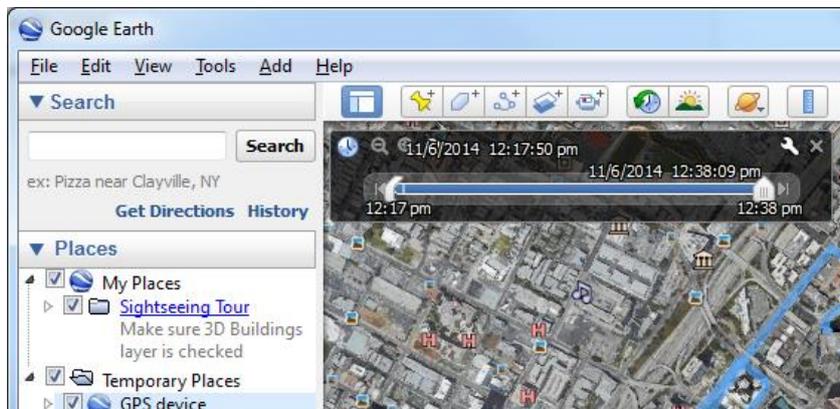


Figure 69 Display the track with Google Earth



7.9. Auto-Change Baud Rate

This feature is turned on by default – but user has a control to disable it. Refer to **Section 7.10.1 Auto-Change Baud Rate Enable/Disable** for details.

When TelitView sends a command string to change the baud rate on the UART of the GNSS module, if the command is recognized as a built-in commands by TelitView, it will automatically change the baud rate on the current COM port to match the new baud rate.

The entry source that can be recognized by TelitView is from the following:

- A user-entered string in the “Command string” box in the NMEA Monitor
- A command from the “Basic Commands”
- A command from the “User commands”

This feature is supported in all GNSS products, as listed in the **Section 7.1.2 Product List**.

7.10. Special Test Settings

➤ Menu: Test > Special Test Settings

This dialog box allows user to set up various testing flags or TelitView system conditions that are special or to change the default behavior of TelitView.

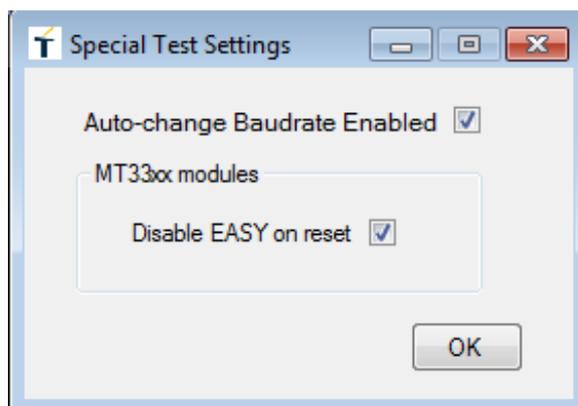


Figure 70: Special test settings

Currently the special test setting offered in TelitView for setups contains the following

- Auto-change Baud rate Enabled
- Disable EASY on reset

Their use is described in details next.



8. EPO Feature

The EPO stands for Extended Prediction Orbit – a type of server-generated extended ephemeris developed and supported by Mediatek®.

8.1. EPO Source Setup and Get EPO

➤ Menu: Tools > EPO Host Manager

The following figure illustrates how it looks like after launching the EPO Host Manager.

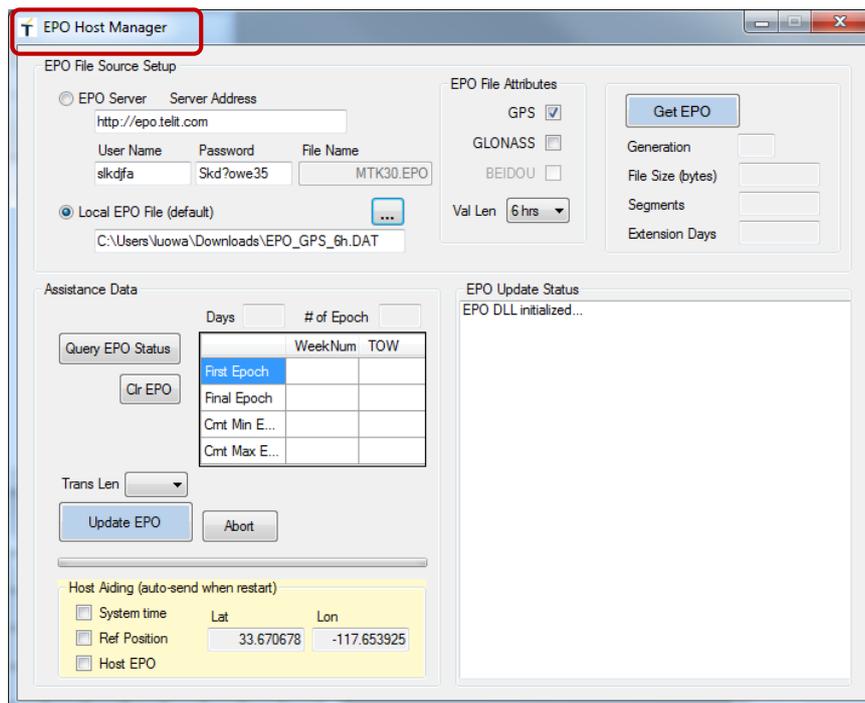


Figure 71 EPO Host Manager

8.1.1. EPO File Source Setup

User selects one of following two ways to specify how to get the EPO data ready for transfer to a client module.

1) EPO Server

- When the “EPO Server” checkbox is checked, it is expected that the user is going to download an EPO file from a remote server.



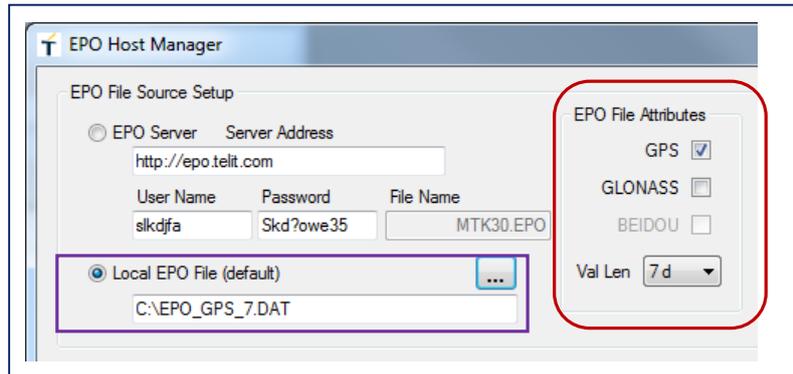


Figure 75 Local EPO file of GPS only

Examples:

- The following example illustrates that a user selected a satellite type of GPS + GLONASS with validity length of 6 hours; the EPO file for download is EPO_GR_6h.DAT.

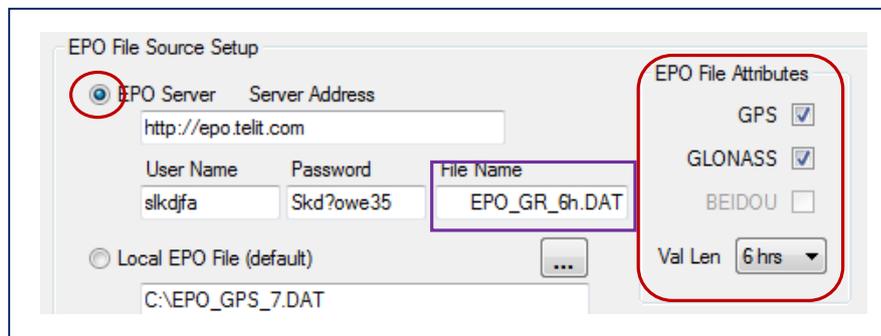


Figure 76 EPO file of GPS + GLONASS and the file name

The following examples illustrates that a local EPO file has been detected as a GPS only with 14 day validity length properties.

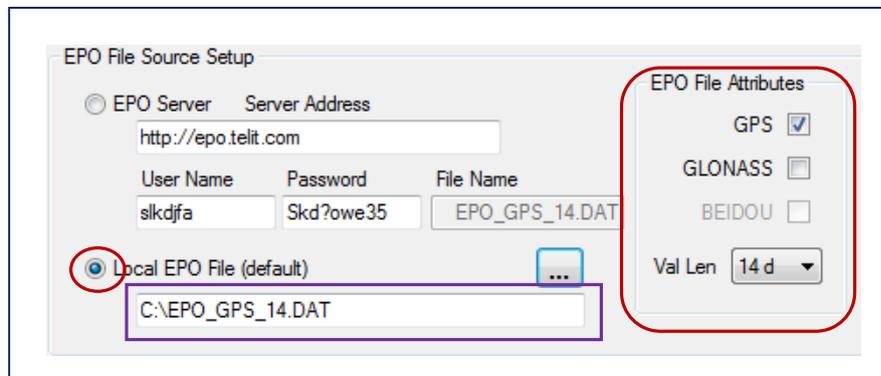


Figure 77 Local EPO file of GPS only and 14 day validity



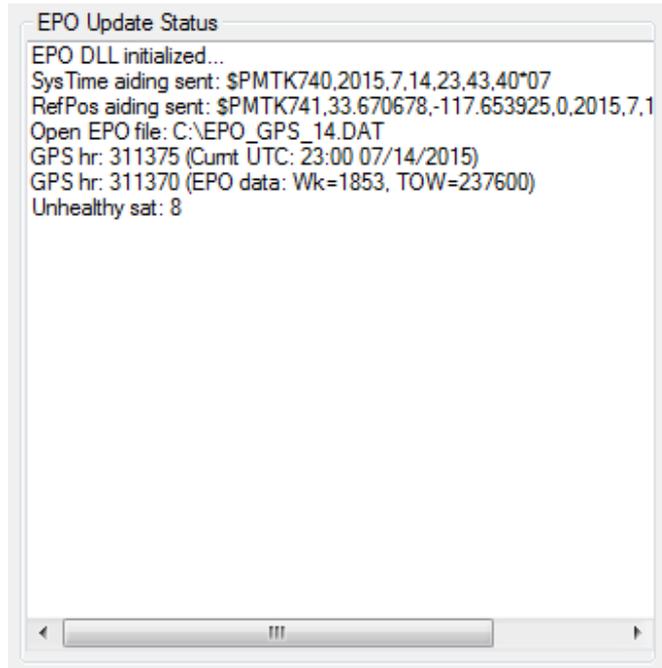


Figure 85 Host EPO aiding update status

- System time sent: “PMTK740, 2015,7,14,23,43,40” – 23:43:40 07/14/2015
- Reference position sent:
- “PMTK741, 33.670678, -117.653925, 0, ...” – lat = 33.670678, lon = -117.653925, alt = 0m, etc.
- Host EPO sent: EPO file: C:\EPO_GPS_14.DAT
- Unhealthy satellite: SVID = 8
- Debug messages: Current time and the EPO time, etc.



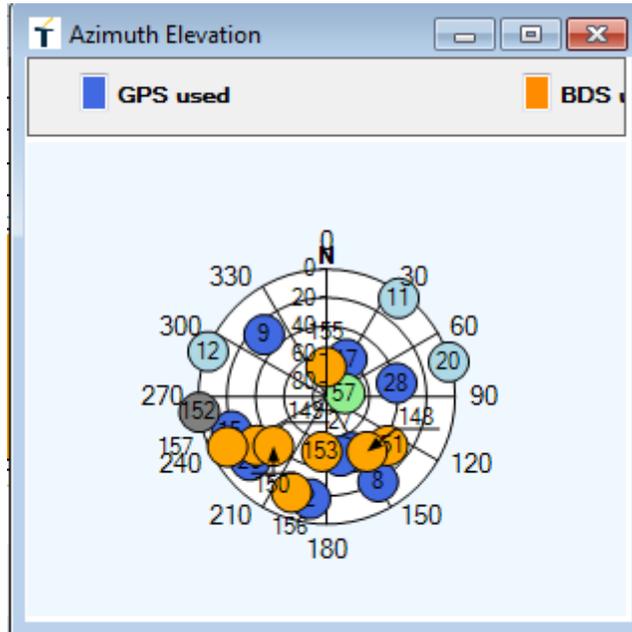


Figure 96: Azimuth elevation view: GPS + BeiDou from SE873

GPS + BeiDou output from SL871

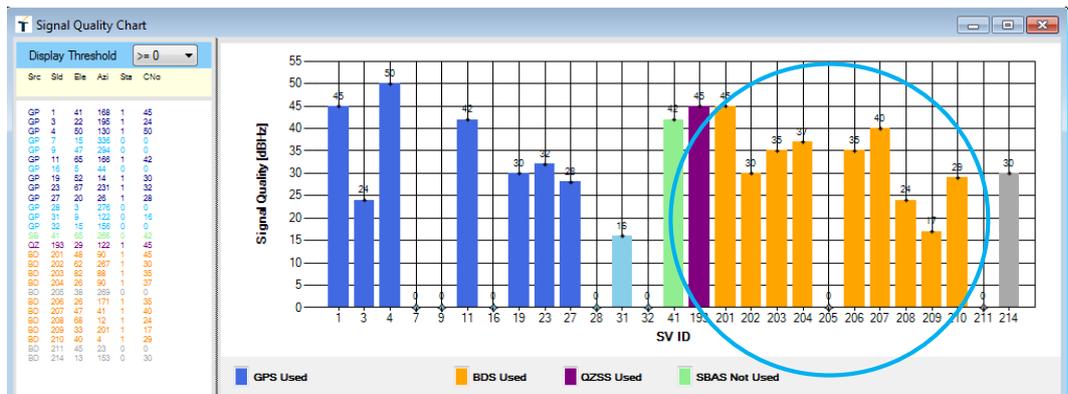


Figure 97: Signal quality view: GPS + BeiDou from SL871



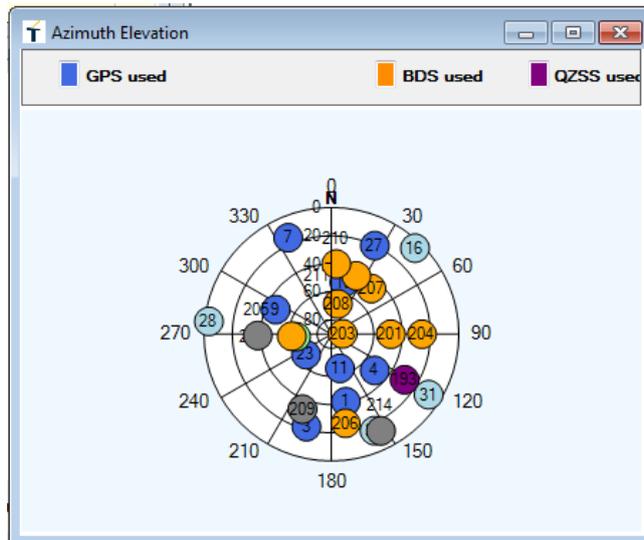


Figure 98: Azimuth elevation view: GPS + BeiDou from SL871

GPS + BeiDou output from SL869

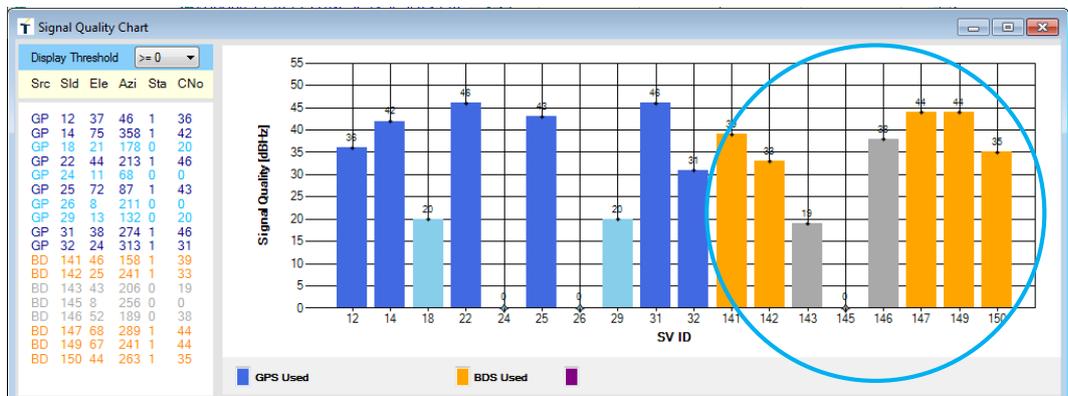


Figure 99: Signal quality: GPS + BeiDou from SL869



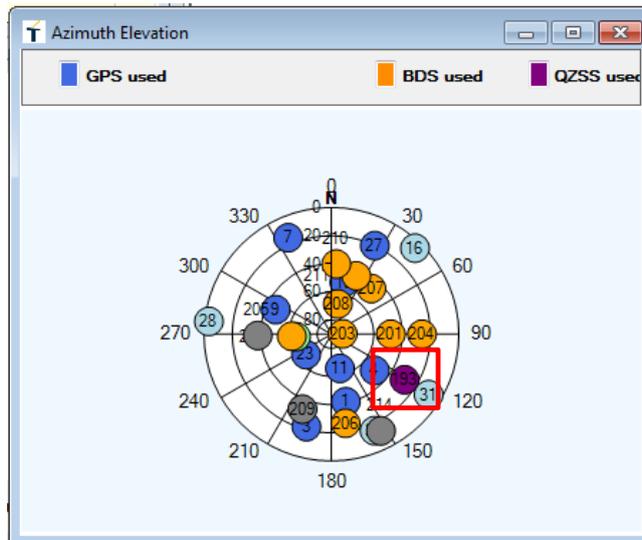


Figure 102 Azimuth elevation view: QZSS from SL871

9.1.4. GNSS Signal Charts: GPS + GALILEO

These figures illustrate the GNSS signals in the form of GPSS + Galileo:

- Their SVIDs and signal levels in the Signal Quality Chart view.
- The GNSS source, SVIDs, satellite states and other real time parameters.
- The elevation and azimuth information in the Azimuth Elevation view.
- Galileo satellites are shown in the circle.

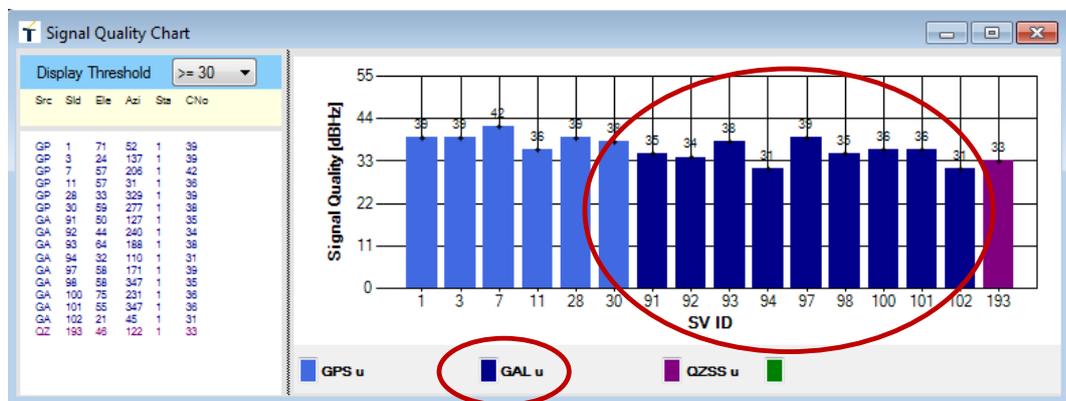


Figure 103 Signal quality view: GPS + Galileo from SL871



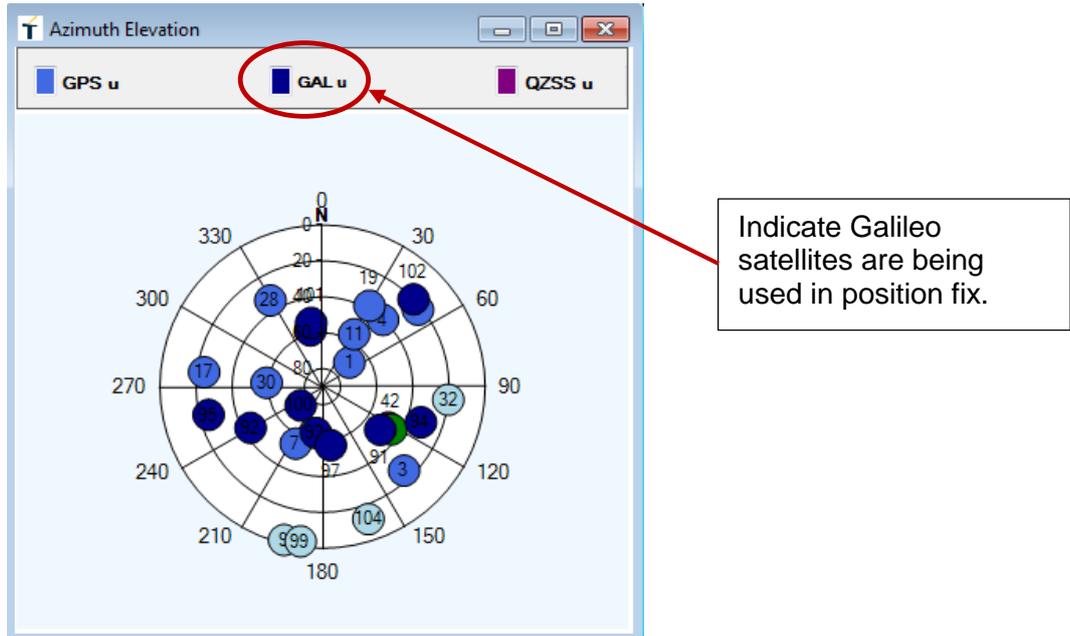


Figure 104 Azimuth elevation view: GPS + Galileo from SL871

9.1.5. GNSS Signal Charts: GPS + GLONASS + GALILEO

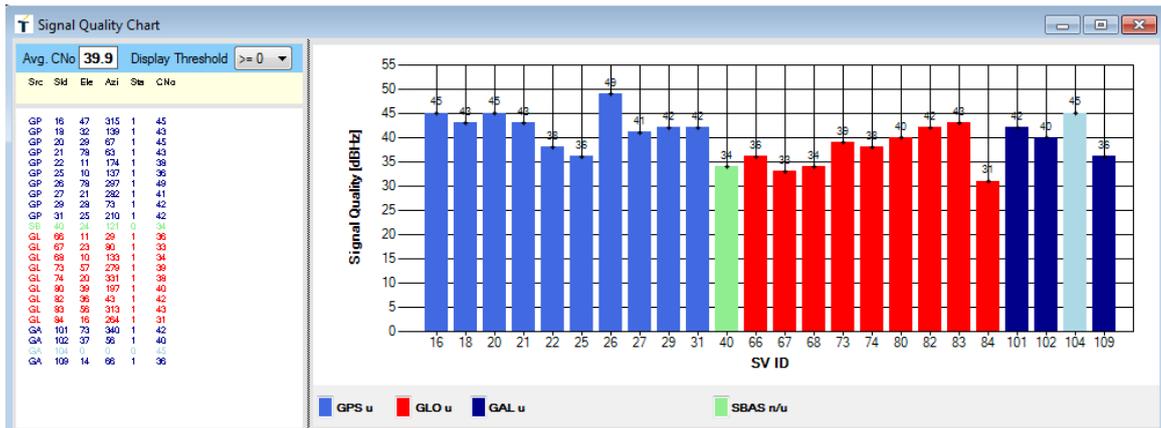


Figure 105 Signal quality view: GPS + GLONASS + Galileo from SL871



9.2. FAQ and Error Info

9.2.1. Error: “The serial is not ready”

When this error box pops up, it indicates the program attempted but failed to open the serial port with the name as specified. A normal cause is that the port is unavailable.

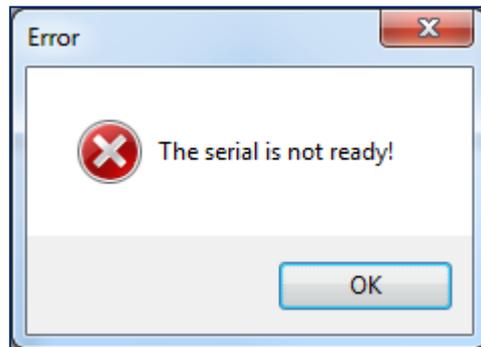


Figure 106 Prompt for COM port setup failure

There can be different reasons for a serial port to become unavailable.

For example, a port used in a connection profile, also known as a session, may become unavailable if it is used by another instance of TelitView. Another example, is when the USB cable is disconnected and the operating system removes it from the list of ports.

9.2.2. A session is running by another TelitView

This dialog box indicates when a TelitView starts at a particular session, the same session has been running (by another instance of TelitView).

Note: TelitView does not prevent user from running an instance on the same session. It only warns user if multiple instances of TelitView are running the same session, then they share the same connection profile parameter and may change the parameters that are not expected.

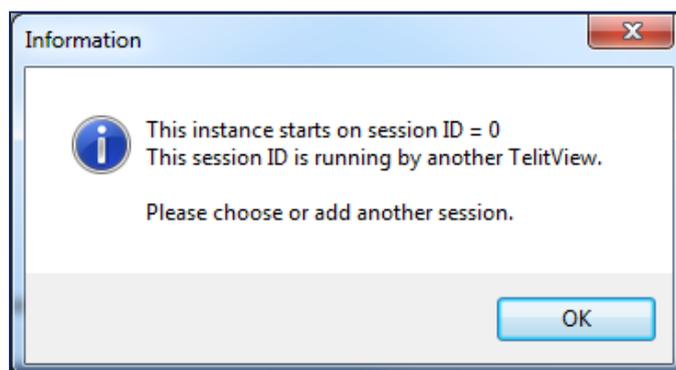


Figure 107 Prompt for concurrent running session



9.2.3. Information: “Do you want to update them in the Session setup”

When this dialog box pops up, it is because some parameters of the serial port have been changed, and the parameters are part of the connection profile. As a result, the user is prompted to be aware the change will affect the session.

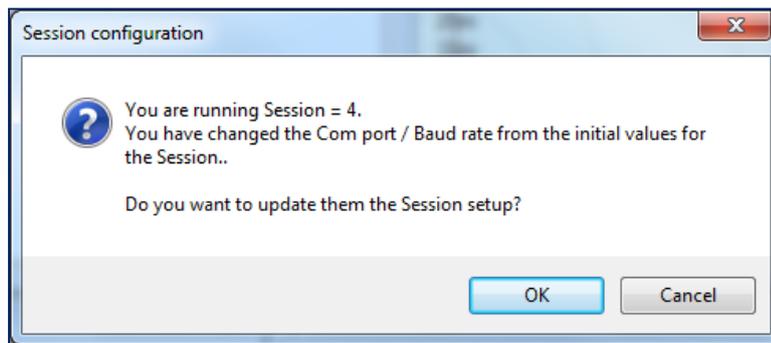


Figure 108 Prompt for updating/overwriting a session setup



