View 3200 Software User's Manual

Windows 9X / ME / NT / 2K / XP / CE Version

OmniSTAR Monitoring Software for the OmniLite 132 and the 3200LR12 DGPS Receivers

Issue 4.1, January 2002

A Product of the Fugro Group of Companies

The terms OmniSTAR, Starfix and SeaSTAR refer to Fugro's world-wide DGPS services for which this DGPS receiver is used.

These services vary primarily in the amount of processing that is carried out on the raw DGPS data from the world-wide network of reference stations before being passed onto the user. Although the services broadcast on different satellite channels, the equipment used is broadly the same for different services.

REVISION HISTORY		
Issue 1.0	May 2000	First Issue
Issue 2.0	Nov 2001	Alignment with new software version
Issue 3.0	Dec 2001	Alignment with new software version
Issue 4.0	Jan 2002	CE version appended
Issue 4.1	July 2002	Minor update to align with new software release

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INTRODUCTION

Congratulations on your purchase of an OmniSTAR differential GPS (DGPS) receiver. The View 3200 software package is designed to allow you to easily control the DGPS receiver from your PC or handheld Windows CE® device.

MAJOR FEATURES

- Available for Windows 9X/ME/NT/2K/XP PC or Windows CE Handheld PC
- Is able to attach to multiple receivers simultaneously (PC version only)
- Enables the user to monitor and control basic functions of the OmniSTAR OmniLite 132 and 3200LR12 DGPS receivers.

REQUIREMENTS

Hardware

The following hardware is the minimum recommended for the View 3200 Software:

- Windows 9X/ME/NT/2K/XP based PC or a Windows CE Handheld PC (version 2.11 or higher)
- One RS232 port

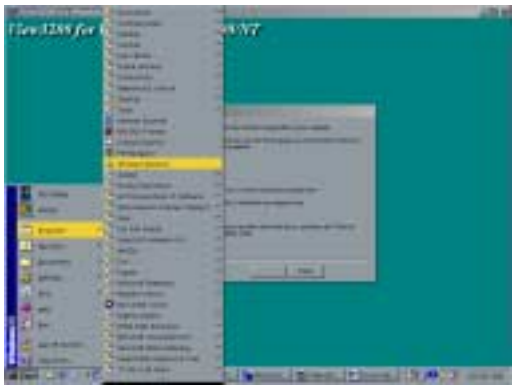
Connections

The DGPS receiver is connected to the computer's serial port via a 3-wire serial cable.

INSTALLING ONTO WINDOWS

Installing your new software onto your Personal computer is a simple task. Simply insert the disk with the software into your computer.

From the Windows Start button, select Program then Windows explorer.



From the Explorer window, select the disk containing the program, for example A:\ for the floppy disk.

You will see a Window similar to that below.

Double click on the Setup Icon.

Then simply follow the instructions in the set up menus.

Click next to continue, you will be given the option to change the Program Group, Click “Next” to accept the default setting.

The software will now be installed.

Finally, to complete the setup, choose to either reboot your computer or reboot it later. You must reboot your computer to complete the installation, but this can be carried out after you close open applications.

Congratulations, you have just installed View 3200 for Windows. You are now ready to use this program to configure your receiver.

SETUP FOR WINDOWS

There are some short simple steps that are required to set up the DGPS receiver for optimum performance.

1. Connect the receiver to the computer via a serial cable.
2. Connect the software to the DGPS Receiver.
3. Configure the OmniSTAR differential service.
4. Check the OmniSTAR signal subscription.

Connect the hardware to the DGPS Receiver

The DPGS receiver will most likely look similar to the photograph above (some models differ slightly in appearance) with two DB9F connectors and an antenna connector on the back panel.

Connect a 3-wire serial cable to the TSIP serial port (usually labelled Port A) on the OmniSTAR receiver and the serial port on the PC / Windows CE device. The cable **must** be a 3-wire serial cable otherwise the connection will not work properly.

Connect the View 3200 software to the DGPS Receiver

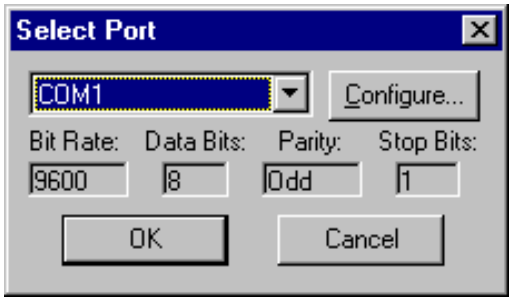
Either:

(a) Go to the *File* menu and select *Connect…*

OR

(b) Select the *Connect* icon from the toolbar.

Both of the above methods will bring up the Select Port dialog box shown above.



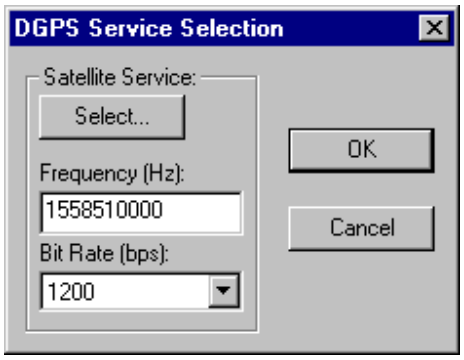
Select the communications port the DGPS receiver is attached to and then configure the port using the *Configure* button. A *Configure* dialog box will be displayed showing the communications parameters for the selected port.

The most common setting for TSIP communication is 9600 bps, 8 data bits, **odd** parity, 1 stop bit and no flow control. Press the OK button to close the *Configure* dialog box and save changes. Press the Cancel button to discard changes.

A position window should appear (either LLA or ECEF depending upon the GPS configuration) containing the GPS receiver's current position.

Configure the OmniSTAR Differential Service

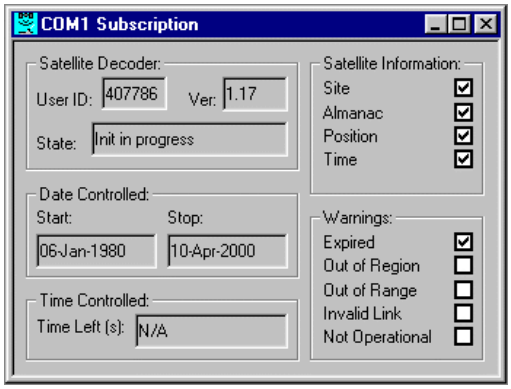
Once the receiver is connected to the View3200 software and is providing a position report it is now necessary to set the frequency and symbol rate for the OmniSTAR service in the current geographical region. If you are unsure of the OmniSTAR service that should be used in your region, please contact the OmniSTAR help line and we will assist you.



1. Go to the *Configuration* menu and select the *DGPS Service…*
2. The DGPS Service selection box will appear (as shown right).
3. Now either:
   a) Type in the required frequency and symbol rate (if it isn't correct already)

   OR

   a) Press the *Select…* button. The *Select OmniSTAR Service* dialog box will appear.
   b) Scroll through the list and select the service that is closest to you geographically (contact the OmniSTAR help line if you are unsure which service should be used).
   c) Press the OK button for the *Select OmniSTAR Service* dialog.
   d) Press the OK button for the DGPS Service Selection dialog.



Check OmniSTAR Subscription

To check the status of your OmniSTAR DGPS service subscription go to the *Status* menu and select *Subscription*. The window shown on the right will appear.

If you do not have an antenna connected or OmniSTAR is not being received then some of this dialog box may be blank.

Depending upon the type of subscription you have one of either the *Date Controlled* section or the *Time Controlled* section will be marked N/A. If the *Date Controlled* section has a start and stop date in it make sure that the current date (in GPS time) is between those two dates. If the *Time Controlled* section has a value in it make sure it is above zero. Otherwise, your unit has expired and before you can use the differential service you must purchase a DGPS signal license from OmniSTAR. Contact the OmniSTAR sales office (office hours) or the help line (out of office hours) for more details.

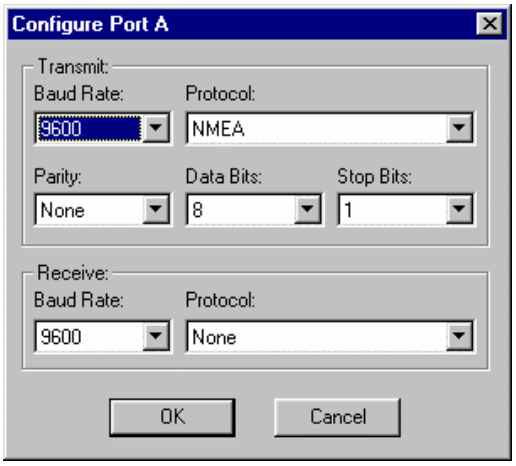
MENUS

Ports Menu

The *Ports* menu is used to change the settings on either of the GPS receiver's communication ports. There are three options available *Port A*, *Port B and TSIP Break*. In general port A is used for communication by the program and should not be modified.

Both the Port A and Port B options produce the Configure Port dialog box shown below. In this dialog box the protocol and baud rate of both of the GPS receiver's ports can be configured.

The third option, TSIP Break, should only be used in a troubleshooting situation where no communication with the receiver is possible.

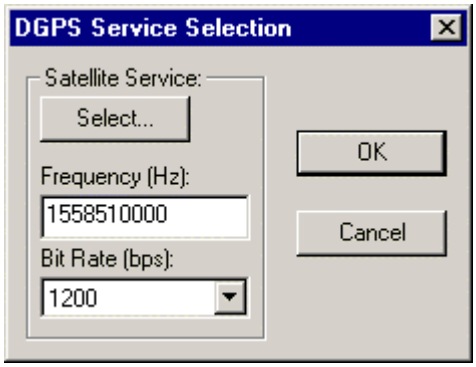


Configuration Menu

The Configuration menu controls the GPS parameters. The menu items are as follows:

- DGPS Service
- GPS I/O Options
- GPS Mode
- NMEA Output
- OmniSTAR Activation
- Receiver Parameters

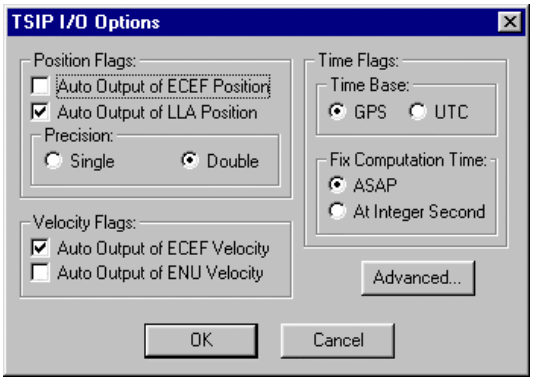
DGPS Service Selection



Used to select between the different OmniSTAR DGPS sources. The DGPS Service Selection dialog can be used to change these parameters.

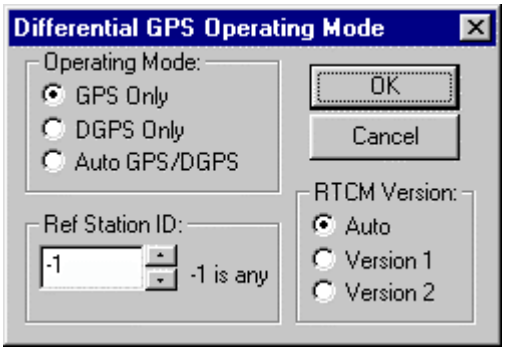
GPS I/O Options

Controls what types of position and velocity TSIP packets are output and what precision those packets use. There are also some advanced options that should be modified only by the experienced operator.



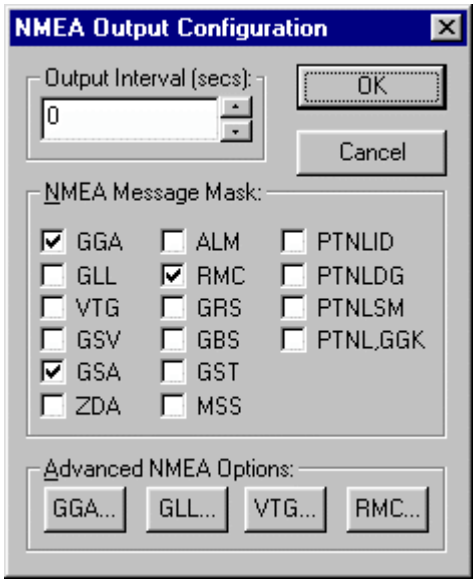
GPS Mode

The GPS operating mode (whether GPS only, DGPS only or GPS / DGPS operation) can be selected as well as the reference station to be used. Normally the reference station is left at –1 for using any reference station (VBS receivers).



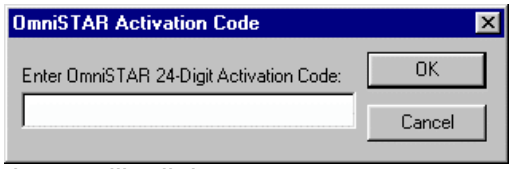
NMEA Output

Various NMEA strings can be selected for transmission out of either Port A or Port B. The NMEA output interval can also be selected here. Note that for output of NMEA at frequencies greater than 1Hz the output interval should be set to zero and the Receiver Parameters dialog box should be used to set the output frequency. These settings will only be used when the respective port is configured to use the NMEA protocol (using the ports menu).



OmniSTAR Activation

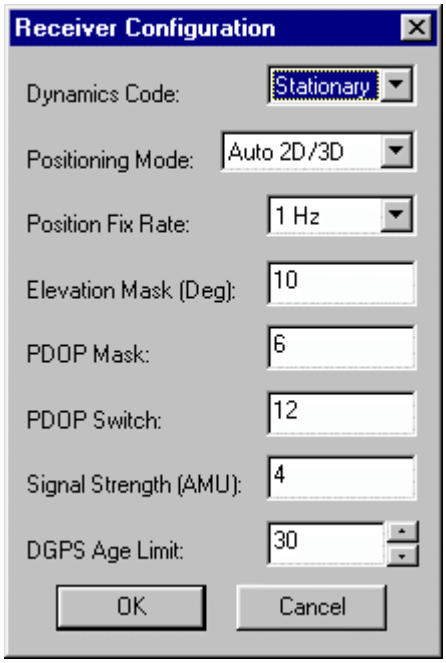
Used to enter a key generated by OmniSTAR support staff if they are unable to establish a subscription via



the satellite link.

Receiver Parameters

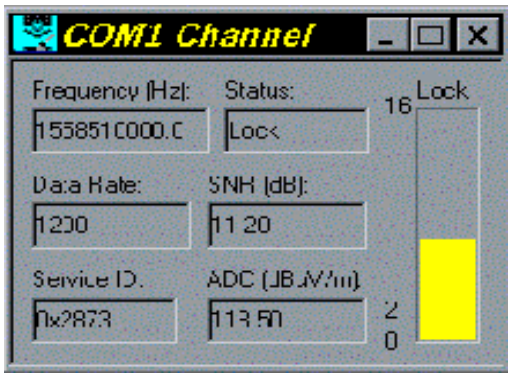
Various receiver parameters can be set here including the dynamics code, positioning mode, position fix rate, elevation mask, PDOP mask, PDOP switch, signal strength and DGPS age limit.



Status Menu

When selected, the status menu items become windows that view the various receiver attributes including DGPS channel, firmware version, receiver health, OmniSTAR subscription, position and velocity.

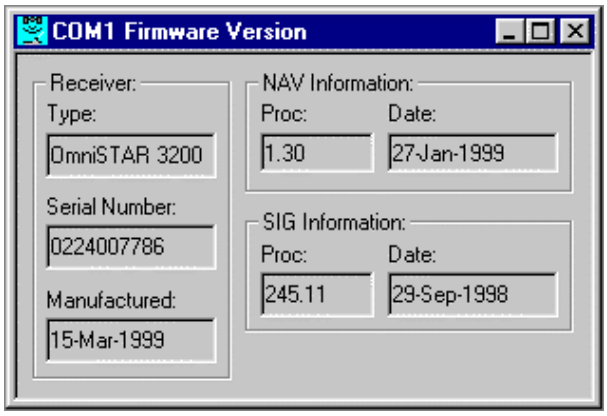
Channel



This panel describes the real-time state of the receiver's satellite link (whether it is connected or not).

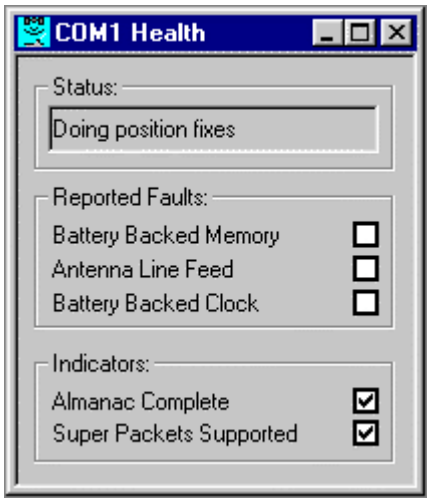
Firmware

This panel shows the version of firmware residing in the receiver.



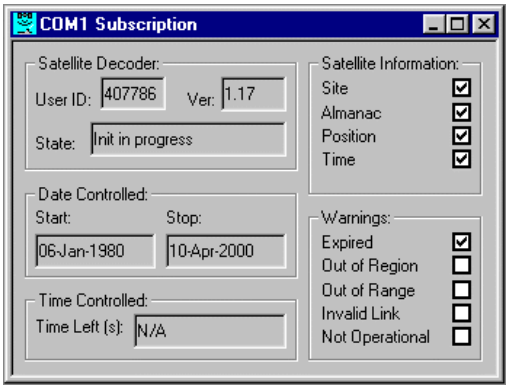
Health

This panel shows the receiver's health.



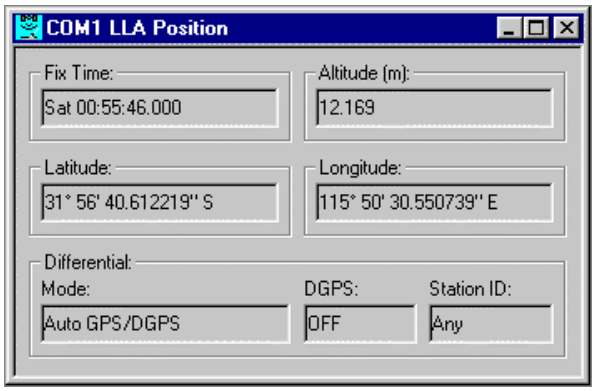
Subscription

This panel shows the receiver's subscription status.



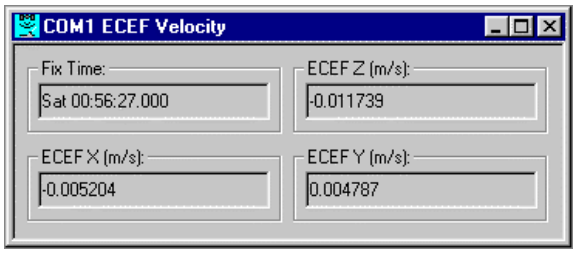
Position

This panel shows the receiver's position



Velocity

This panel shows the receiver's velocity



View Menu

Aside from the standard windows menu items this menu contains the Update Rate item. This is used to set how frequently the status window items are updated. The minimum update rate (in seconds) is 1. The default is 2.

Window Menu

This is the standard windows Window menu (Tile, cascade, arrange).

Help Menu

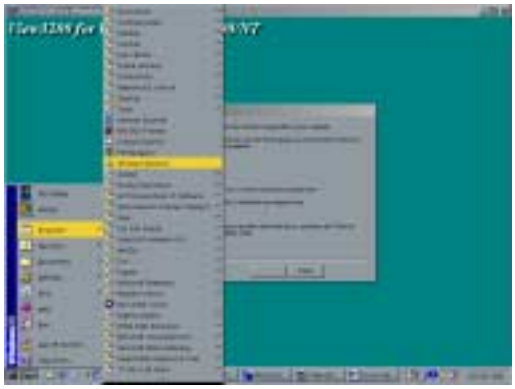
This menu currently only contains an item that displays the about box.

INSTALLING ONTO A WINDOWS CE DEVICE

Prior to installing your new CE software, you should ensure that you have already installed “Activesync” onto your computer.

Installing your new software onto your Personal computer is a simple task. Simply insert the disk with the software into your computer.

From the Windows Start button, select Program then Windows explorer.



From the Explorer window, select the disk containing the program, for example A:\ for the floppy disk.

You will see a Window similar to that below.

Double click on the Setup Icon.

Then simply follow the instructions in the set up menus.

Click next to continue, you will be given the option to change the Program Group, Click “Next” to accept the default setting.

The software will now be installed.

Finally, to complete the setup, choose to either reboot your computer or reboot it later. You must reboot your computer to complete the installation, but this can be carried out after you close open applications.

Upon completion of the install onto your desktop, the software is automatically installed onto your CE device. Follow the screen prompt for correct installation.

Congratulations, you have just installed View 3200 for Windows. You are now ready to use this program to configure your receiver.

SETUP FOR CE DEVICES

There are some short simple steps that are required to set up the DGPS receiver for optimum performance.

5. Connect the receiver to the CE device via a serial cable.
6. Connect the software to the DGPS Receiver.
7. Configure the OmniSTAR differential service.
8. Check the OmniSTAR signal subscription.

Connect the hardware to the DGPS Receiver

The DPGS receiver will most likely look similar to the photograph above (some models differ slightly in appearance) with two DB9F connectors and an antenna connector on the back panel.

Connect a 3-wire serial cable to the TSIP serial port (usually labelled Port A) on the OmniSTAR receiver and the serial port on the PC / Windows CE device. The cable **must** be a 3-wire serial cable otherwise the connection will not work properly.

Control Buttons

Config = Config Menu

Status = Status Menu

Ports = Ports Menu

 = Connect

 = Disconnect

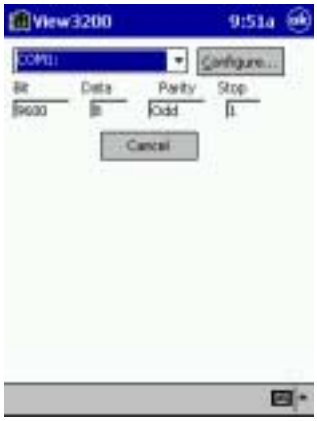
Connect the View 3200 software to the DGPS Receiver

Either:

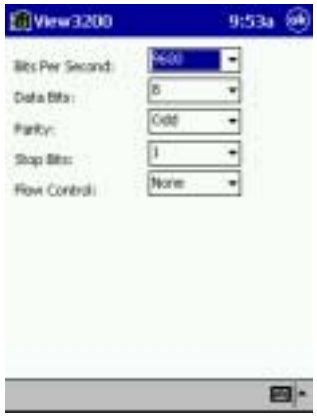
(c) Go to the *Config* menu and select *Connect…*

OR

(d) Select the *Connect* icon from the toolbar.



Connection window



Port config window

Both of the above methods will bring up the Select Port dialog box shown above.

Select the communications port the DGPS receiver is attached to and then configure the port using the *Configure* button. A *Configure* dialog box will be displayed showing the communications parameters for the selected port.

The most common setting for TSIP communication is 9600 bps, 8 data bits, **odd** parity, 1 stop bit and no flow control. Press the OK button to close the *Configure* dialog box and save changes. Press the Cancel button to discard changes.

A position window should appear (either LLA or ECEF depending upon the GPS configuration) containing the GPS receiver's current position.

Configure the OmniSTAR Differential Service

Once the receiver is connected to the View3200 software and is providing a position report it is now necessary to set the frequency and symbol rate for the OmniSTAR service in the current geographical region. If you are unsure of the OmniSTAR service that should be used in your region, please contact the OmniSTAR help line and we will assist you.

4. Go to the *Config* menu and select the *DGPS Service…*
5. The DGPS Service selection box will appear (as shown above).
6. Now either:
   b) Type in the required frequency and symbol rate (if it isn't correct already)

   OR

   e) Press the *Select…* button. The *Select OmniSTAR Service* dialog box will appear.
   f) Scroll through the list and select the service that is closest to you geographically (contact the OmniSTAR help line if you are unsure which service should be used).
   g) Press the OK button for the *Select OmniSTAR Service* dialog.
   h) Press the OK button for the DGPS Service Selection dialog.

Check OmniSTAR Subscription

To check the status of your OmniSTAR DGPS service subscription go to the *Status* menu and select *Subscription*. The window shown above will appear.

If you do not have an antenna connected or OmniSTAR is not being received then some of this dialog box may be blank.

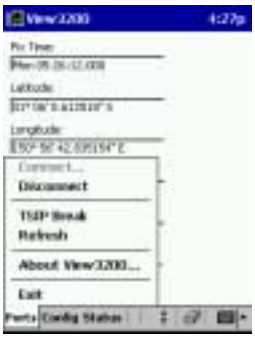
Depending upon the type of subscription you have one of either the *Date Controlled* section or the *Time Controlled* section will be marked N/A. If the *Date Controlled* section has a start and stop date in it make sure that the current date (in GPS time) is between those two dates. If the *Time Controlled* section has a value in it make sure it is above zero. Otherwise, your unit has expired and before you can use the differential service you must purchase a DGPS signal license from OmniSTAR. Contact the OmniSTAR sales office (office hours) or the help line (out of office hours) for more details.

MENUS

Ports Menu

The *Ports* menu is used to connect to the GPS receiver. The menu items are as follows:

- Connect
- Disconnect
- TSIP Break
- Refresh
- About
- Exit



TSIP Break, should only be used in a troubleshooting situation where no communication with the receiver is possible.

Configuration Menu

The Configuration menu controls the GPS parameters. The menu items are as follows:

- DGPS Service
- GPS I/O Options
- GPS Mode
- NMEA Output
- OmniSTAR Activation
- Receiver Parameters
- Port A and Port B
- Update rate

In general port A is used for communication by the program and should not be modified.

Both the Port A and Port B options produce the Configure Port dialog box shown above. In this dialog box the protocol and baud rate of both of the GPS receiver's ports can be configured.

DGPS Service Selection (Source)

Used to select between the different OmniSTAR DGPS sources. The DGPS Service Selection dialog can be used to change these parameters.

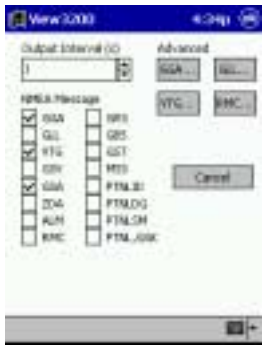
GPS I/O Options

Controls which types of position and velocity TSIP packets are output and what precision those packets use. There are also some advanced options that should be modified only by the experienced operator.

GPS Mode

The GPS operating mode (whether GPS only, DGPS only or GPS / DGPS operation) can be selected as well as the reference station to be used. Normally the reference station is left at –1 for using any reference station (VBS receivers).

NMEA Port A and Port B



Various NMEA strings can be selected for transmission out of either Port A or Port B. The NMEA output interval can also be selected here. Note that for output of NMEA at frequencies greater than 1Hz the output interval should be set to zero and the Receiver Parameters dialog box should be used to set the output frequency. These settings will apply only after the respective port is set to use the NMEA protocol for transmission (use Port A or Port B menu).

OmniSTAR Activation

Used to enter a key generated by OmniSTAR support staff if they are unable to establish a subscription via the satellite link.

Receiver Parameters

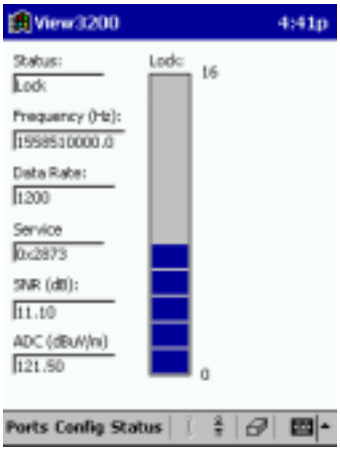
Various receiver parameters can be set here including the dynamics code, positioning mode, position fix rate, elevation mask, PDOP mask, PDOP switch, signal strength and DGPS age limit.

Status Menu

When selected, the status menu items become windows that view the various receiver attributes including DGPS channel, firmware version, receiver health, OmniSTAR subscription, position and velocity. The menu items are as follows:

- Channel
- Health
- Firmware
- Subscription
- Position
- Velocity

Channel Status



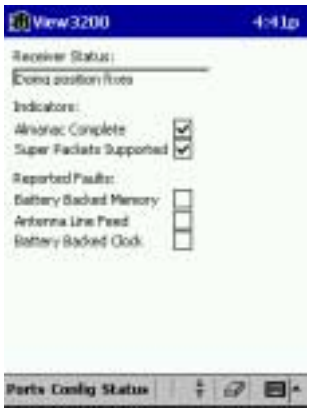
This panel describes the real-time state of the receiver's satellite link (whether it is connected or not).

Firmware

This panel shows the version of firmware residing in the receiver.

Health

This panel shows the receiver's health.



Subscription

This panel shows the receiver's subscription status.

This panel shows the receiver's position

Position

Velocity

This panel shows the receiver's velocity

View Menu

Aside from the standard windows menu items this menu contains the Update Rate item. This is used to set how frequently the status window items are updated. The minimum update rate (in seconds) is 1. The default is 2.

Window Menu

This is the standard windows Window menu (Tile, cascade, arrange).

Help Menu

This menu currently only contains an item that displays the about box.