OEM4-G2 / OEM4-G2L GPSCard™

QUICK START GUIDE

This guide provides the basic information you need to setup and begin using your new OEM4-G2 or OEM4-G2L GPSCard. For more detailed information on the installation and operation of your receiver, please refer to the user manuals provided on the accompanying CD. To order a printed copy of the manuals, free of charge, follow the instructions given on the enclosed *User Manuals* card.

BOX CONTENTS

In addition to this *Quick Start Guide*, the following is provided with your GPSCard:

- 1 ESD wrist strap
- 1 CD containing:
  - An installation program for NovAtel's GPS PC utilities, including *GPSolution®*
  - Product documentation, including user manuals
  - The *OEM4 Software Development Kit*
- *OEM4 Family Quick Reference Guide*
- *User Manuals* card for requesting printed manuals

ADDITIONAL EQUIPMENT REQUIRED

The additional equipment listed below is needed for a basic setup:

- A Windows-based PC with an RS-232 DB-9 port
- For an OEM4-G2, a power supply between 4.5 and 18 VDC capable of providing at least 2.7 W or, for an OEM4-G2L, a 3.3 ± 0.15 VDC supply capable of at least 2.4 W
- An enclosure to protect against environmental conditions and RF interference

- A wiring harness to provide power to the receiver and access to the data and strobe signals, with one or more DB-9 connectors for serial communication with a PC or other data communications equipment
- A null modem cable
- A quality GPS antenna, like the GPS-702 from NovAtel
- An antenna RF cable with a MMCX male connector at the receiver end, such as NovAtel's C016 RF cable combined with our GPS-C002 RF adapter cable

SETTING UP YOUR GPSCARD

Complete the steps below to connect and power your GPSCard. See *Volume 1* of the *OEM4 Family User Manual* for more information on steps *1* through *3*.

1. Install the GPSCard and the wiring harness in a secure enclosure to reduce environmental exposure and RF interference, making sure to protect against ESD.

   If you do not take the necessary precautions against ESD, including using the provided ESD wrist strap, you may damage the GPSCard.

2. Mount the GPS antenna on a secure, stable structure with an unobstructed view of the sky.

3. Connect the GPS antenna to the GPSCard using the antenna RF cable and the RF adapter cable.

4. Connect a serial port on the receiver to a serial port on the PC using a null modem cable.

5. Connect the power supply to the GPSCard.

6. Plug in and/or turn on the power supply.

INSTALLING THE PC UTILITIES

Once the GPSCard is connected to the PC, antenna, and power supply, install NovAtel's GPS PC utilities.
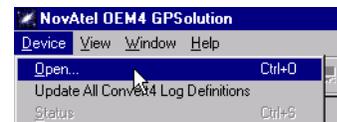
1. Start up the PC.

2. Insert the accompanying CD in the CD-ROM drive of the computer.

3. Select *Install the OEM4 GPS PC Utilities* from the window that is automatically displayed. If the window does not automatically open when the CD is inserted, select *Run* from the *Start* menu and select the *Browse* button to locate *Setup.exe* on the CD drive.

4. Install the PC utilities by advancing through the steps provided in the *NovAtel GPS PC Utilities* setup utility.
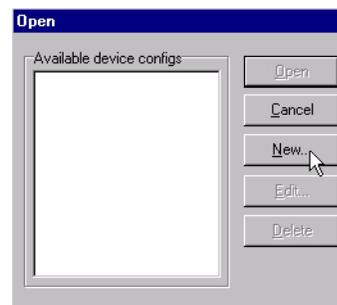
ESTABLISHING COMMUNICATION WITH THE RECEIVER

To open a serial port to communicate with the receiver, complete the following.

1. Launch *GPSolution* from the *Start* menu folder specified during the installation process. The default location is *Start | Programs | OEM4 PC Software*.
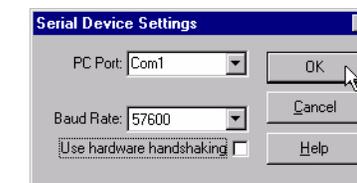
2. Open the *Device* menu and select *Open....*

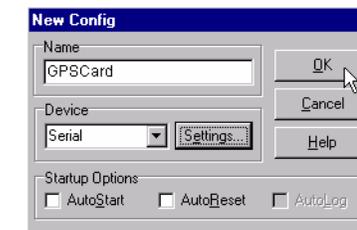3. Select the *New...* button in the *Open* dialog box.

4. Enter a name for the new device configuration in the *Name* field of the *New Config* dialog box.
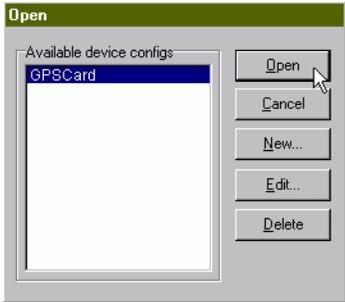
5. Select the *Settings* button.

6. Select the PC serial port the GPSCard is connected to from the *PC Port* drop-down list.

7. Select *57600* from the *Baud Rate* list.

8. Uncheck the *Use hardware handshaking* checkbox.

9. Select *OK* to save the settings.

10. Select the *OK* button to close the *New Config* dialog box and create the new device configuration.
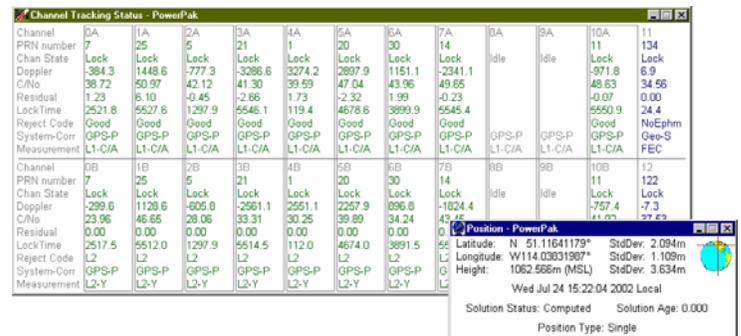
11. Select the new configuration from the *Available device configs* list in the *Open* dialog box.

12. Select the *Open* button to open communications with the GPSCard.

USING GPSOLUTION

GPSolution provides access to key information about your receiver and its position. The information is displayed in windows accessed from the *View* menu. For example, select *Position Window* from the *View* menu to display the position of the receiver. To show details of the GPS and geostationary (SBAS) satellites being tracked, select *Tracking Status Window* from the menu. For more information on using *GPSolution*, select *Contents* from *GPSolution*'s *Help* menu.

ENTERING COMMANDS

The GPSCard uses a comprehensive command interface. Commands can be sent to the receiver using the *Console* window in *GPSolution*, which is opened from the *View* menu. Commands are entered in the text box at the bottom of the window.

The following information is important when entering commands:

- Commands can be entered in three formats: *ASCII*, *Abbreviated ASCII*, and *Binary*. *Abbreviated ASCII* is the best format to use when you wish to work with the receiver directly.
- Press the *Enter* key to send the command string to the receiver.
- The commands are not case sensitive.

The *OEM4 Family Quick Reference Guide* provided with the receiver lists all the available commands and the parameters they use for the *Abbreviated ASCII* format.
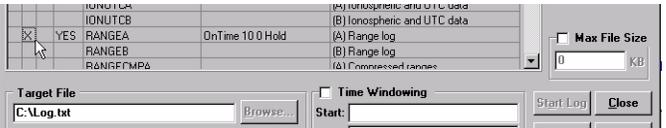
LOGGING DATA

An extensive collection of logs has been created to capture the data your GPSCard receives and processes. These logs can be directed to any of the GPSCard's serial ports and can be automatically generated when new or changed data becomes available or at regular intervals. The available logs are listed in the *OEM4 Family Quick Reference Guide*.

To log data, use the LOG command. For example, to log the pseudorange position to COM 2 every 30 seconds, enter the following:

```
LOG COM2 PSRPOS ONTIME 30
```

Logs can be generated in one of three formats: *ASCII*, *Abbreviated ASCII*, or *Binary*. Refer to *Volume 2* of the *OEM4 Family User Manual* for information on the LOG command, specifying the output format, and the detailed contents of each log.

If you prefer, *GPSolution* provides a graphical interface for configuring data logging. Select *Logging Control Window* from the *View* menu. In the *Logging Control* window, you can select which logs to capture and choose which ports to send the data to. In addition, you can specify a file in which to save the data.

DETERMINING WHEN THE POSITION IS VALID

When the receiver has a valid position, the *POSITION VALID*, or *PV*, signal will go high. In addition, the *Solution Status* field in *GPSolution*'s *Position* window will show *Computed.*

ENABLING SBAS POSITIONING

Certain models of the OEM4-G2 and OEM4-G2L GPSCards are capable of SBAS positioning. This positioning mode is enabled using the SBASCONTROL command. At the time of publication, the WAAS (North America) and EGNOS (Europe) systems are in test mode. As a result, the following commands are typically used to enable WAAS and EGNOS modes, respectively:

```
SBASCONTROL ENABLE WAAS 0 ZEROTOTWO

SBASCONTROL ENABLE EGNOS 120 IGNOREZERO
```

Once enabled, the *Position Type* field shown in *GPSolution*'s *Position* window should change from *Single* to *WAAS*.