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 ٠
- A guality 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.
- Connect the power supply to the GPSCard. 5.
- Plug in and/or turn on the power supply. 6.

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.

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Device	<u>C</u> ancel
Serial Settings	<u>H</u> elp

- 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.

Serial Device Settings	×
PC Port: Com1	ОК
Baud Rate: 57600 💌	Cancel
Use hardware handshaking	<u>H</u> elp

10. Select the OK button to close the New Config dialog box and create the new device configuration.

New Config						
GPSCard						
Device	<u>C</u> ancel					
Serial Settings	<u>H</u> elp					
Startup Options	🗖 AutoLog					

- 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.

🔏 Channel Tra	acking St	stus - Powe	rPak									
Channel PRN number Chan State Doppler C/No Residual LockTime Reject Code System-Corr Measurement	0A 7 Lock -384.3 38.72 1.23 2521.8 Good GPS-P L1-C/A	1A 25 Lock 1448.6 50.97 6.10 5527.6 Good GPS-P L1-C/A	2A 5 Lock -777.3 42.12 -0.45 1297.9 Good GPS-P L1-C/A	3A 21 Lock -3286.6 41.30 -2.66 5546.1 Good GPS-P L1-C/A	4A 1 Lock 3274.2 39.59 1.73 119.4 Good GPS-P L1-C/A	5A 20 Lock 2897.9 47.04 -2.32 4678.6 Good GPS-P L1-C/A	6A 30 Lock 1151.1 43.96 1.99 3899.9 Good GPS-P L1-C/A	7A 14 Lock -2341.1 49.65 -0.23 5545.4 Good GPS-P L1-C/A	BA Idle GPS-P L1-C/A	9A Idle GPS-P L1-C/A	10A 11 Lock -971.8 48.63 -0.07 5550.9 Good GPS-P L1-C/A	11 134 Lock 6.9 34.56 0.00 24.4 NoEphm Geo-S FEC
Channel PRN number Chan State Doppler C/No	08 7 Lock -299.6 23.96	18 25 Lock 1128.6 46.65	28 5 Lock -605.8 28.06	38 21 Lock -2561.1 33.31	4B 1 Lock 2551.1 30.25	58 20 Lock 2257.9 39.89	6B 30 Lock 896.8 34.24	78 14 Lock -1824.4 43.45	8B Idle	9B Idle	108 11 Lock -757.4	12 122 Lock -7.3 27.52
Residual LockTime Reject Code System-Corr Measurement	0.00 2517.5 L2 GPS-P L2-Y	0.00 5512.0 L2 GPS-P L2-Y	0.00 1297.9 L2 GPS-P L2-Y	0.00 6514.5 L2 GPS-P L2-Y	0.00 112.0 L2 GPS-P L2-Y	0.00 4674.0 L2 GPS-P L2-Y	0.00 3891.5 L2 GPS-P L2-Y	55 Latit L Long G Heig	ude: N 5 itude: W11 ht: 1062 Wes	1.1164117 4.0383198 .566m (MS	9° StdD 7° StdD SL) StdD 22:04 2002	lev: 2.094m lev: 1.109m lev: 3.634m 2 Local
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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.

[COM1]	-
1	
log version	<u>E</u> nter

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 followina:

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.

QUESTIONS OR COMMENTS

If you have any questions or comments regarding your GPSCard, please contact NovAtel Customer Service using one of the methods provided below.

Email:support@novatel.ca

Web:www.novatel.com

Phone: 1-800-NOVATEL (U.S. & Canada) 403-295-4900 (International)

Fax: 403-295-4901



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