

**QUICK START GUIDE**

This guide provides the basic information you need to setup and begin using your new PowerPak-4E. 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 PowerPak-4E:

- 1 automobile power adapter cable
- 1 serial cable
- 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:

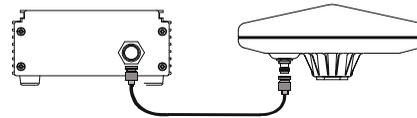
- A Windows-based PC with an RS-232 DB-9 port
- One of the following:
  - A standard 12 VDC automobile power outlet, or
  - NovAtel's GPS-APWR model AC adapter, or
  - A 10 - 36 VDC power supply capable of at least 4.0 W and a power cable with a standard 2.1 mm center-positive plug at the receiver end<sup>1</sup>
- A quality GPS antenna, like the GPS-600 offered by NovAtel
- An antenna RF cable with a TNC male connector at the receiver end, such as NovAtel's C016 model

1. If an alternative power source is preferred, the automobile power adapter can be cut off from the power cable. The exposed wires (the negative line has text printed on it) can then be tied to a 10-36 VDC supply capable of 4.0 W supply. The use of a 3 A slow-blow fuse is recommended.

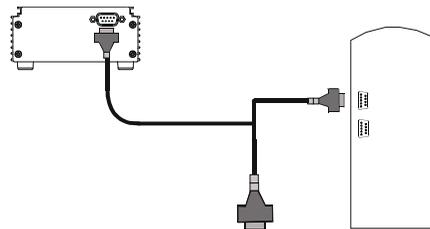
**SETTING UP YOUR POWERPAK-4E**

Complete the steps below to connect and power your PowerPak.

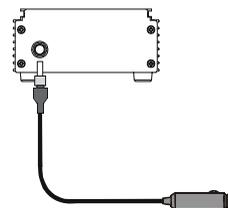
1. Mount the GPS antenna on a secure, stable structure with an unobstructed view of the sky.
2. Using the antenna RF cable, connect the GPS antenna to the *ANT* port, which is found on the front face of the PowerPak.



3. Connect the *COM 1* port on the receiver to a serial port on the PC, using the provided serial cable.



4. Connect the power cable to the power port, which is labeled *10 - 36V DC*.



5. Plug in the adapter and/or connect and turn on the power supply. When the PowerPak is properly powered, the *POWER LED* will be red.

**INSTALLING THE PC UTILITIES**

Once the PowerPak 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. Install the PC utilities by advancing through the steps provided in the *NovAtel GPS PC Utilities* setup utility. If the setup utility is

not automatically accessible when the CD is inserted, select *Run* from the *Start* menu and select the *Browse* button to locate *Setup.exe* on the CD drive.

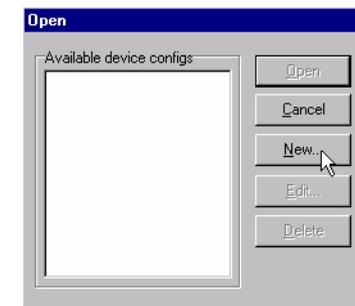
**ESTABLISHING COMMUNICATION WITH THE RECEIVER**

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

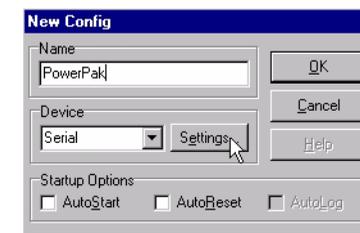
1. Launch *GPSolution* from the *Start* menu folder specified during the installation process. The default location is *Start | Programs | OEM4 PC Software*.
2. Open the *Device* menu and select *Open....*



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 PowerPak 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.

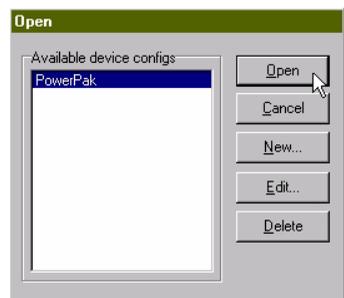


10. Select the *OK* button to close the *New Config* dialog box and create the new device configuration.



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 PowerPak.



## 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.

Channel Tracking Status - PowerPak											
Channel	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	7A
PRN number	25	25	5	21	1	20	30	14	11	184	11
Chan State	Lock	Lock									
Doppler	384.3	1448.6	777.3	3286.6	3274.2	2897.9	1151.1	2341.1	997.8	6.9	6.9
C/N0	35.72	30.97	42.12	41.30	38.99	47.04	43.96	48.65	46.63	34.56	34.56
Residual	1.23	6.10	0.45	-2.66	1.73	-2.32	1.99	-0.23	5550.9	24.4	0.00
Lock Time	2521.8	5527.6	1297.9	5546.1	119.4	4678.6	3889.9	5545.4	5550.9	24.4	0.00
Reject Code	Good	NoShm									
System-Cor	GPS-P	Geo-S									
Measurement	L1-C/A	FEK									

## ENTERING COMMANDS

The PowerPak-4E 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

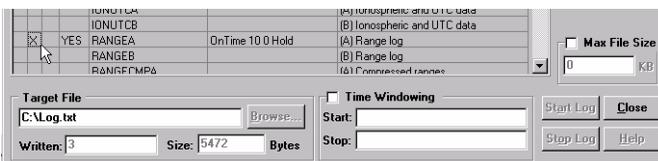
An extensive collection of logs has been created to capture the data your PowerPak receives and processes. These logs can be directed to any of the PowerPak's serial ports and can be automatically generated when new or changed data becomes available or at regular intervals. The available logs are listed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

To log data, use the *LOG* command. For example, to log the pseudo-range position to COM2 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*. See *Volume 2* of the *OEM4 Family User Manual* for information on the *LOG* command, specifying the output format, and the details 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 *VALID POSITION* LED will turn green. In addition, the *Solution Status* field in *GPSolution's Position* window will show *Computed*.

## ENABLING SBAS POSITIONING

Certain models of the PowerPak-4E are capable of SBAS positioning. This positioning mode is enabled using the *WAASCORRECTION* 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:

```
WAASCORRECTION ENABLE 0 WAATESTMODE
```

```
WAASCORRECTION ENABLE 120 EGNOSTESTMODE
```

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

## AVAILABLE PORTS

In addition to the power and antenna ports, there are two serial ports, one strobe port, and an external oscillator input provided on the PowerPak-4E. The *COM 1* and *COM 2* ports provide RS-232 signals, including modem control lines. The *I/O* port supplies access to supplementary strobe signals such as a mark input and a programmable variable frequency output. The *EXT. OSC.* port allows you to connect an external oscillator for a higher level of precision. The specifications for these ports, including signal descriptions and connector details, are given in *Volume 1* of the *OEM4 Family User Manual*.

## QUESTIONS OR COMMENTS

If you have any questions or comments regarding your PowerPak-4E, please contact NovAtel Customer Service using one of 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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