ProPak-LB*plus*™

QUICK START GUIDE

This guide provides the basic information you need to setup and begin using your new ProPak-LB*plus*. For more detailed information on the installation and operation of your receiver, please refer to the user manuals provided on the accompanying CD. The most up to date revisions of these manuals can be found on our website at http://www.novatel.com/Downloads/docupdates.html. To order a printed copy of the manuals, free of charge, follow the instructions given on the enclosed *User Manuals* card. Note that although a *USB Drivers* directory appears on the CD, its contents do not apply to the ProPak-LB*plus*.

BOX CONTENTS

In addition to this *Quick Start Guide*, the following is provided with your ProPak-LB*plus*:

- 1 12V power cable
- 3 serial cables, each with a unique colour-encoded connector at the receiver end
- 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 power outlet, or
  - A 7-15 VDC power supply and a power cable with a 2-pin Switchcraft socket (Switchcraft part number EN3C2F) at the receiver end[1]
- NovAtel's GPS-600-LB dual-frequency GPS and Omni-STAR L-band antenna
- An antenna cable with a TNC male connector at the receiver end, such as NovAtel's C016 model

SETTING UP YOUR PROPAK-LB*plus*

Complete the steps below to connect and power your ProPak.

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

2. Using the antenna cable, connect the antenna to the ⌒ port, which is found on the back face of the ProPak.
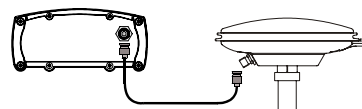

3. Connect the ⅓ port (COM1) on the receiver to a serial port on the PC. The provided COM1 serial cable has a 6-pin, keyed connector at the receiver end.

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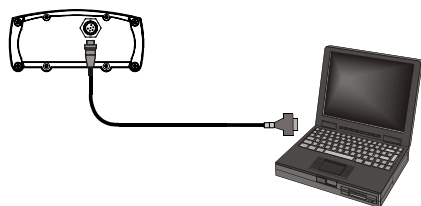
1. If an alternative power source is preferred, the 12V power adapter can be cut off from the power cable. The exposed wires (red for positive, black for negative) can then be tied to a supply capable of at least 5 W. The use of a 3 A slow-blow fuse is recommended.

4. Connect the power cable to the 🔌 port on the receiver.
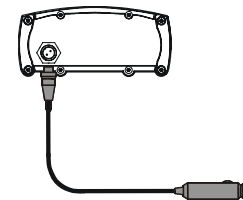
5. Plug in the adapter and/or connect and turn on the power supply. When the ProPak is properly powered, the LED to the right of the 🔌 icon will be red.

INSTALLING THE PC UTILITIES

Once the ProPak 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 program. If the setup program is not automatically accessible when the CD is inserted, select *Run* from the *Start* menu and then the *Browse* button to locate *Setup.exe* on the CD drive.
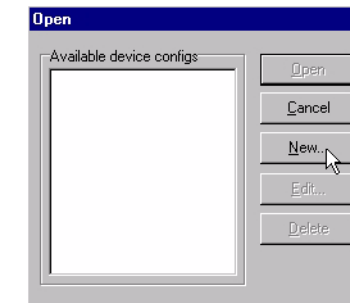
ESTABLISHING COMMUNICATION WITH THE RECEIVER

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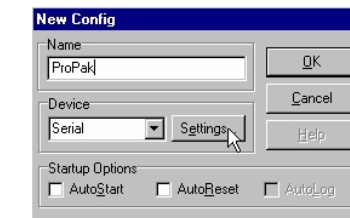
6. Select the PC serial port the ProPak is connected to from the *PC Port* drop-down list.

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

8. Uncheck the *Use hardware handshaking* checkbox.

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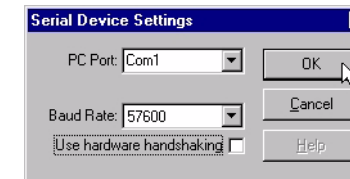
10. Select the *OK* button to close the *New Config* dialog box and create the new device configuration.

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 ProPak.
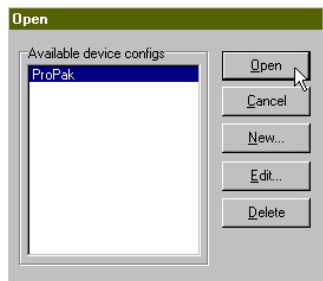
USING GPSOLUTION

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 SBAS satellites being tracked, select *Tracking Status Window* from the menu.
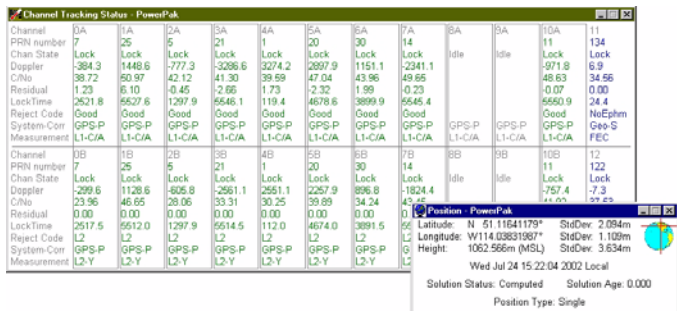
DETERMINING WHEN THE POSITION IS VALID

When the receiver has a valid position, the LED to the right of the ▓ icon will be lit. In addition, the *Solution Status* field in *GPSolution*'s *Position* window will show *Computed.*

ENTERING COMMANDS

The ProPak-LB*plus* 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.

ENABLING L-BAND POSITIONING

Your ProPak-LB*plus* supports L-Band positioning, which allows you to achieve sub-meter accuracy. In order to use OmniSTAR, a subscription to OmniSTAR's *Virtual Base Station* (VBS) or *High Precision* (HP) service is required.

The Canadian Differential Global Positioning System (CDGPS) is a free signal and does not require a subscription.

To contact OmniSTAR, call 1-800-338-9178 or 713-785-5850. You will then be asked to provide the receiver's OmniSTAR serial number (which is different from the NovAtel serial

number). To obtain the OmniSTAR serial number, enter the following command in the *Console* window in *GPSolution*:

```
LOG LBANDINFO
```

The log that is generated displays the OmniSTAR serial number in the fifth field following the log header. It is a six digit number in the range `700000` to `799999`. This log also provides the status of your subscription. In order to activate your subscription, the receiver must be powered and tracking an OmniSTAR satellite. See *Volume 2* of the *OEM4 User Manual* set for more information.

You can switch between OmniSTAR VBS and CDGPS:

To Use CDGPS

```
ASSIGNLBAND CDGPS <freq> 4800
PSRDIFFSOURCE CDGPS
```

To Use OmniSTAR VBS

```
ASSIGNLBAND OMNISTAR <freq> 1200
PSRDIFFSOURCE OMNISTAR
```

Where <freq> is determined for CDGPS or OmniSTAR from the CDGPS beam frequency chart:

East	1547646
East-Central	1557897
West-Central	1557571
West	1547547

or, the OmniSTAR beam frequency chart at:

http://www.omnistar.com/setup_osrc.html

To confirm you are tracking an L-Band signal, log the status information by entering the following command:

```
LOG LBANDSTAT
```

The *Position Type* field shown in *GPSolution*'s *Position* window should change from *Single* to *CDGPS*, *OMNISTAR* (VBS service), or *OMNISTAR_HP* (HP service).

Refer also to *Volume 1* of the *OEM4 User Manual* set where the CDGPS frequencies and their coverage areas are shown.

ENABLING SBAS POSITIONING

Certain models of the ProPak-LB*plus* are also capable of SBAS positioning. This positioning mode is enabled using the `SBAS-CONTROL` 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 ZEROTOTWO
```

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

USING THE SERIAL PORTS

There are three serial ports provided on the ProPak-LB*plus*, each with a unique, keyed connector. Matching serial cables have been provided for each port. The table below provides the labels used for each port and the number of pins, which will match the number of pins on the receiver-end connector of the serial cable.

Port	Labels	Number of Pins
COM1	X Y Z	6
COM2	(((·)))	7
COM3	📱	8

QUESTIONS OR COMMENTS

If you have any questions or comments regarding your ProPak-LB*plus*, 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