SMART ANTENNA™

This guide provides the basic information you need to set up and begin using your new SMART ANTENNA. For more detailed information on the installation and operation of your receiver, please refer to the user manuals. The manuals and their latest updates may be found on our website at:

http://www.novatel.com/Downloads/docupdates.html

DEVELOPMENT KIT BOX CONTENTS

If you purchased a Development Kit, the following is also provided with your SMART ANTENNA:

- 1 AC/DC adapter
- Bushing insert to adapt from 1" to 5/8" thread
- Magnetic mount
- 1 CD containing:
    - An installation program for NovAtel's GPS L1 graphical user interface software, *StarView*
    - Product documentation, including user manuals

RS-232:

- 1 multi-connector cable (7- or 6-pin connector to DB9 connector, 12V power connector and open end)

RS-422:

- 1 straight 15 m cable (12-pin connector to an open end which is for use with a user-supplied connector)
- 1 RS-422 to RS-232 converter

ADDITIONAL EQUIPMENT REQUIRED

In addition to the equipment listed above in the *Development Kit Box Contents* section, you need the following for a basic setup:

- A Windows-based PC with an RS-232 DB-9 port
- One of the following:
    - A 120 V AC wall outlet
    - A standard 12 V DC power outlet, or
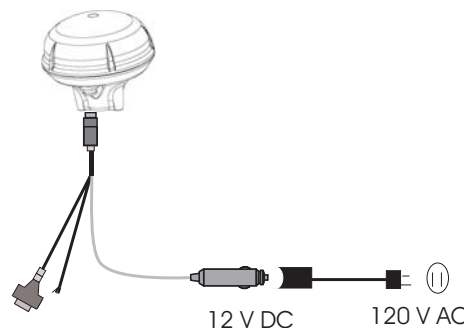   - A +9 to +36 V DC power supply

SETTING UP YOUR SMART ANTENNA

Complete the steps below to connect and power your receiver.

1. Mount the SMART ANTENNA on a secure, stable structure with an unobstructed view of the sky.
2. Connect the SMART ANTENNA to a serial port on the PC.

3. Connect the SMART ANTENNA to a power supply.

12 V DC   120 V AC

4. It is recommended that a back-up battery (3) is placed between the receiver (1) and its voltage supply (2) to act as a power buffer:
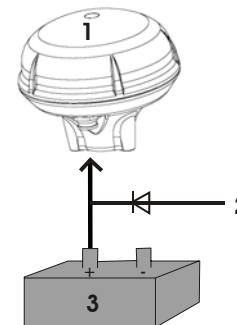
Normally when a vehicle engine is started, power can dip to around 9.6 VDC or even cut-out to ancillary equipment. Plug in the adapter and/or connect and turn on the power supply.

INSTALLING STARVIEW

Once the receiver is connected to the PC and power supply, install the *StarView* software. The *StarView* CD is supplied with the development kits, otherwise *StarView* and its latest updates are available on our website.

To install *Starview* from CD:

1. Start up the PC.
2. Insert the *StarView* CD in the CD-ROM drive of the PC.
3. Install the *StarView* software by following the steps on the screen. If the setup utility is not automatically accessible when the CD is inserted, select *Run* from the *Start* menu and the *Browse* button to locate Setup.exe on the CD drive.

To install *StarView* from our website:

1. Start up the PC and launch your internet service program.
2. Go to our website at http://www.novatel.com/Downloads/ fwswupdates.html and scroll down to the *Superstar II Family Firmware/Software* section.
3. Download the *StarView* setup program and save it in a temporary directory (for example, C:\temp).

4. Use the setup program to install the *StarView* software by following the steps on the screen.

✉ After installation, *StarView* also appears in the Windows Start menu at *Start | Program Files | NovAtel L1 Software*.

The most up to date version of *StarView* may be found on our website. Check our website for updates at:

http://www.novatel.com/Downloads/fwswupdates.html

## ESTABLISHING COMMUNICATION WITH THE RECEIVER

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

1. Launch *StarView* from the folder you specified during the installation process or from the Windows Start menu at: Start | Program Files | NovAtel L1 Software.
2. Open the *File/Port* menu and select *Auto Connect*.
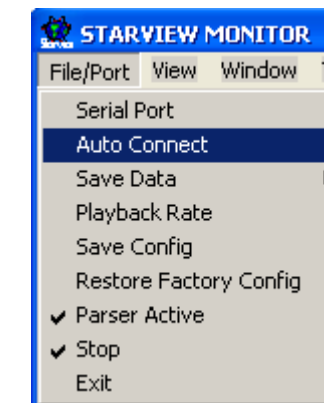
✉ The default data transfer rate is 9600 bps unless your receiver model has Carrier Phase Output (CP) capability with 19200 bps as the default. A list of models is in *Appendix A* of the *SUPERSTAR II Firmware Reference Manual*.

3. Select the PC serial port the SMART ANTENNA is connected to from the *Com Port* drop-down list.
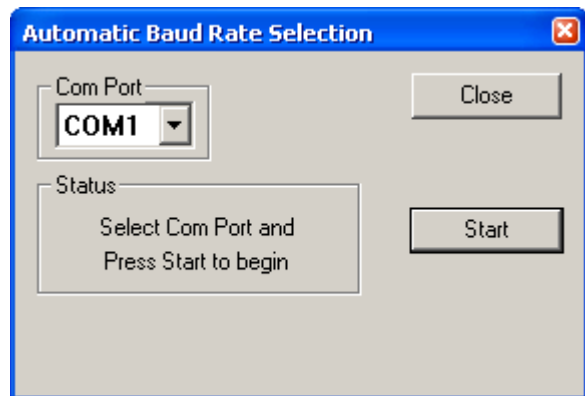
4. Click on *Start* and *StarView* searches for the SMART ANTENNA on the specified port at various baud rates.

USING STARVIEW

StarView provides access to key information about your receiver and its position. The information is displayed in windows accessed from the *Window* menu. For example, to show details of the GPS satellites being tracked, select *Channel | Channel Assignment* from the *Window* menu. Then in the window, right-click with your mouse and select Continuous or One Shot:

Similarly, select *Navigation | LLH Solution* from the *Window* menu and right-click to select Continuous or One Shot. The position of the receiver is displayed in LLH (latitude, longitude and height) coordinates.

DETERMINING WHEN THE POSITION IS VALID

The receiver is in Navigation mode whenever sufficient satellite information and measurement data is available to produce a GPS fix. When the receiver has a valid position, the Nav Mode field in *StarView*'s *LLH Solution,* or *XYZ Solution,* window shows Nav 3-D, Nav 2-D, Diff. 3-D or Diff. 2-D. If it shows Initialized or Initialization Required there is no valid position yet.

ENTERING COMMANDS

The SMART ANTENNA uses a comprehensive command interface. Logs and commands can be sent to the receiver using the *Xmit Msg* and *Tool Setting* menus in *StarView*.

The following information is important when selecting commands:

1. You can send a message request using one shot (Normal mode) or continuous (Special mode) by selecting *Xmit Msg | General Message Request* in *StarView*. Refer to the *SUPERSTAR II Firmware Reference Manual,* which shows how these modes effect individual commands and log requests differently.

2. There is an option in *StarView* to save all messages transmitted by the receiver into a file. Select *File/Port | Save Data* after you have finished selecting messages in Step #2 above.

✉ The *SUPERSTAR II Firmware Reference Manual* provides details on messages and parameters that the SMART ANTENNA uses. It is available on our website at:

http://www.novatel.com/Downloads/docupdates.html

ENABLING SBAS POSITIONING

SMART ANTENNAS are available with an SBAS option. The ability to simultaneously track two SBAS satellites, and incorporate the SBAS corrections into the position, is available on these models.

To enable SBAS, select Tool Setting | DGPS Config in *StarView*. Set the DGPS Type to SBAS only or Automatic. The receiver uses SBAS satellites in your coverage area.

Select Window | Status | SBAS Status to view the status of the SBAS messages. It shows the number of valid SBAS messages that are being decoded for a specific SV number. When the *Valid Messages* count is not incrementing, the receiver is not tracking any SBAS satellites.

When SBAS corrections are incorporated, the LLH solution shows a Nav Mode of Diff. 3-D and a DGPS Source of SBAS.

StarView allows you to deselect GPS or SBAS system satellites. Select Tool Setting | Deselect | SVs from the main menu.

Select Tool Setting | Set Configuration to update receiver configuration parameters such as maximum velocity, antenna type and navigation rate.

Refer to the *SUPERSTAR II Firmware Reference Manual* for an appendix on SBAS Positioning that includes an explanation of dynamic modes.

QUESTIONS OR COMMENTS

If you have any questions or comments regarding your SMART ANTENNA, 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