

Preface

The Global Positioning System (GPS) is a satellite based navigation system operated and maintained by the U.S. Department of Defense. The GPS consists of a constellation of 24 satellites providing world-wide, 24 hour, three dimensional (3-D) coverage. Although originally conceived for military needs, GPS has a broad array of civilian applications including surveying, marine, land, aviation, and vehicle navigation. GPS is the most accurate technology available for vehicle navigation.

As a satellite based system, GPS is immune to the limitations of land based systems such as Loran. Loran navigation is limited in coverage and is encumbered by adverse weather. In addition, the accuracy of Loran navigation varies with geographic location and, even under ideal conditions, cannot compare with GPS. By computing the distance to GPS satellites orbiting the earth, a GPS receiver can calculate an accurate position. This process is called satellite ranging. A 2-D position calculation requires three satellite ranges. A 3-D position calculation, which includes altitude, requires four satellite ranges. GPS receivers can also provide precise time, speed, and course measurements which are beneficial for vehicle navigation.

Differential GPS (DGPS) is a sophisticated form of GPS navigation which provides even greater positioning accuracy. Differential GPS relies on error corrections transmitted from a GPS receiver placed at a known location. This receiver, called a reference station, calculates the error in the satellite range data and outputs corrections for use by other GPS receivers. These GPS receivers are designated as mobile units and can be dispersed as far as 100 km from the base station. Differential GPS eliminates virtually all the measurement error in the satellite ranges and enables a highly accurate position calculation. The SVeeEight Plus GPS receiver is differential-ready for applications requiring DGPS accuracy.

Scope and Audience

Even if you have used other Global Positioning System (GPS) receivers, we recommend that you spend some time reading this manual. The following section provides you with a guide to this manual, as well as to other documentation included with this product.

SVEeEight Plus GPS Manual Organization

All of the information required to integrate and operate the SVEeEight Plus GPS receiver is contained in this manual. This manual contains the following chapters and appendices:

Chapter 1:	Using the SVEeEight Plus GPS Receiver
Chapter 2:	Hardware Integration
Chapter 3:	Software Interface
Chapter 4:	Operation and Performance
Appendix A:	Trimble Standard Interface Protocol
Appendix B:	TSIP Toolkit User's Guide
Appendix C:	Trimble ASCII Interface Protocol (TAIP)
Appendix D:	GPSSK User's Guide (TAIP)
Appendix E:	NMEA 0183
Appendix F:	Specifications and Mechanical Drawings
Glossary	

The SVEeEight Plus GPS receiver is easy to integrate and simple to use. Before proceeding with Chapter 1, please review the information contained in this *Preface* for an overview of the Global Positioning System.

Reader Feedback

Your feedback about the product documentation helps us to improve it with each revision.

To forward your comments, do one of the following:

- Send an email to ReaderFeedback@trimble.com.
- Complete the Reader Comment Form at the back of this manual and mail or fax it according to the instructions at the bottom of the form. Please mark it
Attention: Documentation Group.

If the reader comment form is not available, you can send comments and suggestions to the address in the front of this manual.

All comments and suggestions become the property of Trimble Navigation Limited.

Thank you for your help.

Other Information

This section lists sources that provide other useful information.

World Wide Web (WWW) Site

For more information about Trimble, visit our site on the World Wide Web:

- www.trimble.com

File Transfer Protocol (FTP) Site

Use the Trimble FTP site to send files or to receive files such as software patches, utilities, and answers to Frequently Asked Questions (FAQs):

- <ftp://ftp.trimble.com>

You can also access the FTP site from the Trimble World Wide Web site at:

- www.trimble.com/support/support.htm

Technical Assistance

If you have a problem and cannot find the information you need in the product documentation, *contact your local dealer*. Alternatively, request technical support using the Trimble World Wide Web site (<http://www.trimble.com/support/support.htm>).

Document Conventions

<i>Italics</i>	Software menus, menu commands, dialog boxes and fields.
SMALL CAPITALS	DOS commands, directories, filenames, and filename extensions.
<i>Courier</i>	Represents what is printed on the computer screen.
Courier Bold	Information to be typed in a software screen or window.
Return or Ctrl + C	Identifies a hardware function key or key combination that must be pressed on a computer keyboard.
Helvetica	Bold represents a software command button.

Notes, Tips, Cautions, and Warnings

Notes, tips, cautions, and warnings are used to emphasize important information.



Note – Notes give additional significant information about the subject to increase your knowledge, or guide your actions. A note can precede or follow the text it references.



Tip – Indicates a shortcut or other time or labor-saving hint that can help you make better use of the product.



Caution – Cautions alert you to situations that could cause hardware damage or software error. A caution precedes the text it references.



Warning – Warnings alert you to situations that could cause personal injury or unrecoverable data loss. A warning precedes the text it references.
