

Trimble Survey Controller

Release Notes



Version 7.70
Revision A
January 2001

Corporate Office

Trimble Navigation Limited
Technical Publications Group
645 North Mary Avenue
Post Office Box 3642
Sunnyvale, CA 94088-3642
U.S.A.
Phone: +1-408-481-8940, 1-800-545-7762
Fax: +1-408-481-7744
www.trimble.com

Copyright and Trademarks

© 1999–2001, Trimble Navigation Limited. All rights reserved. The Sextant logo with Trimble, GPS Pathfinder, and GPS Total Station, are trademarks of Trimble Navigation Limited, registered in the United States Patent and Trademark Office.

The Globe & Triangle logo with Trimble, 4600LS, 7400MSi, Convert to RINEX, Coordinate System Manager, Data Dictionary Editor, DC File Editor, DTMLink, Feature and Attribute Editor, Grid Factory, GPSurvey, Line Type Editor, MS750, QuickPlan, RoadLink, Site Surveyor, Symbol Editor, Trimble, Trimble Geomatics Office, Trimble Link, Trimble Survey Controller, Trimble Survey Office, TRIMMARK, TRIMMAP, TRIMNET, TSC1, TTS, and WAVE are trademarks of Trimble Navigation Limited.

All other trademarks are the property of their respective owners.

Release Notice

This is the January 2001 release (Revision A) of the *Trimble Survey Controller Release Notes*. They apply to version 7.70 of the Trimble Survey Controller™ software.

Contents

1 Installation

Installing the Trimble Survey Controller Software	5
WinFLASH.	7
Transferring Survey Controller Version 7.70 Language Files	9
Registering the Software	11
Installing the Trimble Data Transfer Utility	12

2 New Features

Trimble 5700 GPS Receiver Support	13
Additional Conventional Instrument Support.	14
New Trimble Conventional Instrument Support.	14
Radio Support for Trimble and Geodimeter Robotic Instruments	15
Trimble 5600 Series DR200+ and Geodimeter System 600S DR200+ Support	16
Tracklight Support for Trimble and Geodimeter Robotic Instruments	16
Continuous Topo Measuring Option	17
Coarse Measuring Mode Enhancements	17
Wide Area RTK Support	18
Hardware Requirements	18
Configuring the Survey Style	19
Starting a Rover Survey	19
TRIMMARK 3 Support.	19
SC Exchange .dc File Format.	20
Coordinate System Changes	21

Other Changes	22
Using the Trimble Survey Controller Version 7.70 with the Trimble Geomatics Office Version 1.01 Software	23

Installation

This chapter shows how to use the Trimble Survey Controller™ version 7.70 CD.

It covers:

- installing the Trimble Survey Controller software
- installing language and help files
- registering the Trimble Survey Controller software
- installing the Trimble Data Transfer utility (version 1.03)

***Note** – You must install version 1.03 of the Data Transfer utility to transfer files to and from the Trimble Survey Controller version 7.70 software. For more information, see *Installing the Trimble Data Transfer Utility*, page 12.*

Installing the Trimble Survey Controller Software

The Trimble Survey Controller version 7.70 software communicates with particular versions of other Trimble products.

Before using any new Trimble products with Trimble office software, install the office software and then run the installation program on the product CD. This will update all relevant office software.

Table 1.1 shows the office software, receivers, and conventional instruments that the Trimble Survey Controller version 7.70 software communicates with, and the required or recommended minimum version of each.

Table 1.1 Product compatibility

	Trimble product	Use this version (or later)
Software	Trimble Geomatics Office™	1.50
	Trimble Link™	1.01
	Data Transfer (stand-alone)	1.03
Receiver	GPS Total Station® 5700	1.00
	GPS Total Station 4800	1.30
	GPS Total Station 4700	1.30
	Site Surveyor™ 4400	2.38
	7400MSi™	2.38
	Series 4000	7.29
	4600LS™	2.50
	MS750™	1.20
Conventional Instrument	TTS™ 300	2.00
	TTS 500	2.00
	Trimble™ 5600 Series	696-01.00
	Geodimeter Systems 600	
	Trimble 3300 Series	1.03
	Zeiss Elta C	
	Trimble 3600 Series	1.03
	Zeiss Elta R Series	

You can only install the Trimble Link version 1.01 software on a computer that also has the Release 1 AutoCAD Land Development Desktop and Autodesk Survey systems installed.

The Release 2 Autodesk Survey module (for the Release 2 AutoCAD Land Development Desktop) automatically installs a Trimble Link system that is designed to work with the Trimble Survey Controller version 7.70 software. Do not install the version 1.01 system if you already have the Release 2 Autodesk Survey module installed.

WinFLASH

Use WinFLASH to upgrade or reload the software in a TSC1 data collector.

When you install WinFLASH, it automatically updates any Trimble office software files that are used to communicate with the Trimble Survey Controller software. You must install WinFLASH before transferring files to or from the TSC1™ data collector.

Installing WinFLASH

To install WinFLASH from the Trimble Survey Controller CD, close all Trimble applications on your office computer, then do the following:

1. From the main menu, select *Survey Controller v7.70*.
2. Select *Install Survey Controller and Update Software* to start installing WinFLASH.
3. Follow the instructions on the screen. At the end of the file copying process, you can register the Trimble Survey Controller software. For more information, see *Registering the Software*, page 11.

4. When the WinFLASH setup is complete, the *Setup Complete* dialog appears. Do one of the following:
 - If you are a new user, click **Finish**. (Do not select the check box to launch WinFLASH.)
 - If you want to upgrade your Trimble Survey Controller software now, select the check box to launch WinFLASH. Click **Finish**.

If you selected the check box to launch WinFLASH, see the instructions in the next section. Otherwise, skip this section.

Using WinFLASH to Upgrade the TSC1

When you have installed WinFLASH on your office computer, you can use it to upgrade the software on the TSC1 data collector.

Note – If you are a new user, the software that you need is already installed on the data collector.

Before you begin the upgrade, save your files by transferring them to the office computer, or by copying them to the PC card. All data in the main memory is lost when you upgrade the TSC1 software. Use an external power source for the TSC1 data collector while you carry out the upgrade.

To upgrade the TSC1 software:

1. Connect the TSC1 data collector to the office computer.
2. Turn on the TSC1 data collector.
3. Start WinFLASH on the office computer and follow the instructions on the screen to perform a TSC1 upgrade.

Transferring Survey Controller Version 7.70 Language Files

The Trimble Survey Controller 7.70 CD contains language and help files for the Trimble Survey Controller software. Before you transfer a language or help file, install the Trimble Data Transfer utility from the CD. For more information, see *Installing the Trimble Data Transfer Utility*, page 12.

To transfer a language or help file:

1. Connect the TSC1 data collector to your office computer, as described in the Data Transfer chapter of the *Trimble Survey Controller Reference Manual*. From the main menu of the Trimble Survey Controller software, select *Files* then *Import/Export*.
2. Select *Trimble PC communications*. The following message appears: Waiting for PC connection.
3. From the main menu on the CD, select *Survey Controller v7.70* and then *Upload Language/Help Files*. The Data Transfer utility automatically tries to connect to the TSC1 data collector through the COM 1 port.

If the TSC1 data collector is not connected to COM 1, click  to stop the connection, and select another device using the appropriate port.

Select another Survey Controller device from the list in the *Device* field. If necessary, click **Devices** then **New** in the *Devices* dialog to run the Add Device wizard.

4. When Data Transfer has connected to the TSC1 data collector, click the *Send* tab.
5. Click **Add**. The *Open* dialog appears.
6. Do one of the following:
 - To transfer a language file, select Language Files (*.lng) from the *Files of type* field and highlight the file you want to transfer.

- To transfer a help file, select the Help Files (*.hlp) from the *Files of type* field and highlight the file you want to transfer.

***Note** – Transfer the language file **before** you transfer the corresponding help file.*

***Note** – If you are using Windows 98, the default path to the language and help files cannot be automatically set. Navigate to the files located in the \SurvCont\Language folder on the CD.*

7. Click **Select**. The *Open* dialog closes, and the Data Transfer window appears.
8. Click **Transfer All**. When the transfer is complete, click **Close**.
9. Click **Close** in the Data Transfer window to exit Data Transfer.

To change the language on the Trimble Survey Controller software:

1. From the main menu, select *Configuration / Controller / Language*.
2. Select the required language and press .
3. Turn the TSC1 data collector off, and then turn it on again.
4. To display the online help in the language you have selected, press .

Registering the Software

If you register your Trimble Survey Controller software and supply your contact details, Trimble can send you information about the software as soon as it becomes available, including any new developments in the product. Your registration helps Trimble to continually improve its product support and development.

You can register your software when prompted at the end of the installation process, or from the main menu of the Trimble Survey Controller CD. To do this:

1. From the main menu on the CD, select *Register Survey Controller*.
2. Select one of the following methods of registration:
 - Complete and submit the registration form supplied on the Internet.
 - Print out the supplied text registration form, complete it, and then fax or mail it as instructed.

The questions on the Internet and fax/mail registration forms are the same.

Installing the Trimble Data Transfer Utility

To transfer files to and from the Trimble Survey Controller version 7.70 software, you must use the Trimble Data Transfer version 1.03 utility, which is supplied free with the Trimble Survey Controller software. You can install it as many times as you need from the Trimble Survey Controller installation CD.

To install the Data Transfer software:

1. From the main menu on the Trimble Survey Controller CD, select *Data Transfer 1.03*.
2. Select the appropriate language—this starts the Data Transfer Setup program.

The Setup program guides you through the rest of the installation process.

New Features

This chapter describes the new features of the Trimble Survey Controller version 7.7 software.

Trimble 5700 GPS Receiver Support

The Trimble Survey Controller software can now be used with the Trimble™ 5700 GPS Receiver.

For information on connecting the receiver to the TSC1 data collector and setting it up for use with different survey techniques, refer to the *5700 GPS Receiver User Guide*.

In addition, the following changes have been made in the Trimble Survey Controller software for when you are using a 5700 GPS receiver:

- The Trimble Survey Controller software supports 10 Hz (0.1 second) data logging to the receiver.
- The Trimble Survey Controller software does not support the copying of receiver files from the *Instrument* menu. You can still delete and undelete receiver files from the *Instrument* menu.

To copy receiver files from the 5700 GPS receiver, use the Data Transfer utility to transfer files from the receiver, or from the Survey data card, to the office computer.

You cannot use the Trimble Survey Controller software to copy receiver files from the data card when it is inserted in the TSC1 data collector.

- To carry out a WAAS survey with the receiver, use the GPS Configurator software to set the receiver to *Ignore WAAS correction health*. This allows the receiver to use the WAAS satellites before they are enabled by the FAA (Federal Aviation Administration). For more information on using the GPS Configurator software, refer to the *5700 GPS Receiver User Guide*.

Additional Conventional Instrument Support

Support for Trimble and Geodimeter servo and robotic conventional instruments has improved with the addition of the following new and enhanced features.

New Trimble Conventional Instrument Support

The Trimble Survey Controller software supports the expanded line of Trimble conventional instruments. Geodimeter and Zeiss instruments have been renamed into Trimble's new line of conventional instruments. However, the Trimble Survey Controller software still supports the old model names.

Table 2.1 shows the changes made to the names.

Table 2.1 Changes to Trimble conventional instrument model names

New Trimble conventional instrument model name	Former model name
Trimble™ 3300	Zeiss R Series
Trimble™ 3600	Zeiss Elta C
Trimble™ 600M	Geodimeter 500/600
Trimble™ 5600 Servo	Geodimeter 500/600 Servo
Trimble™ 5600 Robotic	Geodimeter 600 Robotic

Radio Support for Trimble and Geodimeter Robotic Instruments

You can now configure the radio settings for a Trimble 5600 Series / GDM instrument from the Trimble Survey Controller software.

To configure the radio:

1. Select *Survey Style / Instrument*.
2. Set the *Radio channel*, *Station address*, and *Remote address* fields as required.
3. Remove the control unit from the instrument.
4. Connect the TSC1 data collector to the instrument. When you turn on the instrument, it automatically connects to the Trimble Survey Controller software.
5. Press the  softkey to set the radio at the instrument.

When you connect the TSC1 data collector to the remote radio, the Trimble Survey Controller software establishes the radio link between the instrument and remote radio, using the specified settings.

Trimble 5600 Series DR200+ and Geodimeter System 600S DR200+ Support

The Trimble Survey Controller software now supports the use of the Trimble 5600 Series DR200+ and Geodimeter System 600S DR200+ instrument in servo mode. To enable servo mode:

1. In the Survey Style, set *EDM precision* to Instrument default.
2. Configure the instrument for Direct Reflex (DR) measurement mode.

Tracklight Support for Trimble and Geodimeter Robotic Instruments

When you use a Trimble 5600 Series / GDM instrument that is set up with a Tracklight unit, you can use the Trimble Survey Controller software to set the intensity of the guide-light.

To set the Tracklight unit, connect the TSC1 data collector to the instrument then do the following:

1. From the main menu, select *Instrument / Instrument controls*.
2. Press **Trklight**.
3. Do one of the following:
 - Press **High** to emit the guide-light at a high intensity.
 - Press **Normal** to emit the guide-light at normal intensity.
 - Press **Off** to turn the Tracklight unit off.

Continuous Topo Measuring Option

The Trimble Survey Controller software now has a continuous topo data collection option for use with a Trimble 5600 series / GDM instrument in a robotic survey. This option gives faster data collection as it puts the instrument in tracking mode and lets you store the latest measurement taken while continuing to track your prism.

To use this option, select a Trimble 5600 Robotic or Geodimeter 600 Robotic survey style, and then select *Survey / Continuous topo*.

Coarse Measuring Mode Enhancements

The EDM measuring rate has improved when you operate a Trimble 5600 Series / GDM instrument in Coarse mode. Coarse measurements now take two seconds to return a measured distance.

To set the instrument to Coarse mode:

- In the Survey Style, set *EDM precision* to Coarse..

Wide Area RTK Support

Wide area RTK systems consist of a distributed network of reference stations communicating with a control center to calculate GPS error corrections over a wide area. Real-time correction data is transmitted by radio or cellular modem to the rover receiver within the network area.

The system improves reliability and operating range by significantly reducing systematic errors in the reference station data. This lets you increase the distance at which the rover receiver is located from the physical reference stations, while improving on-the-fly (OTF) initialization times.

The Trimble Survey Controller software supports broadcast formats from the following wide area RTK solutions:

- SAPOS FKP
- Virtual Reference Station (VRS)

To use a wide area RTK system, first check that you have the necessary hardware and firmware.

Hardware Requirements

All rover receivers must have firmware that support wide area RTK.

Real-time correction data is provided by 2m-band radio or cellular modem. For details about the delivery option for your system, please see your service provider.

Configuring the Survey Style

Before you start a survey using a wide area RTK system, configure the RTK survey style.

To select a wide area RTK broadcast format:

1. In the Survey Style, select *Rover options*.
2. In the *Broadcast format* field, select one of the following options from the list:
 - SAPOS FKP
 - VRS

To select a radio solution:

1. In the Survey Style, select *Rover options*.
2. In the *Type* field, select your radio from the list.

Note – If you are using a radio in a VRS system, you must select a two-way radio. You cannot use Trimble internal radios.

Starting a Rover Survey

Starting a rover survey is the same as for a real-time survey. For more information, refer to the *Trimble Survey Controller Reference Manual*.

To start a survey using a VRS system, you must send an approximate position for the rover receiver to the control station. When you start a VRS survey, this position is automatically sent through your radio communications link in a standard NMEA position message. It is used as the virtual base position for which the RTCM correction data is valid. For more information, please see your service provider.

TRIMMARK 3 Support

The Trimble Survey Controller software now fully supports TRIMMARK™ 3 radios.

SC Exchange .dc File Format

You can now transfer job files in the new Survey Controller (SC) Exchange .dc file format directly to and from the PC card or an external device.

In an SC Exchange .dc file, all observations are reduced to GPS and grid positions (coordinates). This reduced format makes it simpler to process in third-party applications.

In addition, you can use the Data Transfer utility to transfer a Survey Controller job as an SC Exchange file.

*Note – If the job file to be transferred references a *.ggf, *.cdg, or *.pgf file, this referenced file must be located in the C:\Program Files\Common Files\Trimble\GeoData folder on the PC.*

To send or receive an SC Exchange format file from the Trimble Survey Controller software:

1. From the main menu, select *Files / Import/Export*.
2. Do one of the following:
 - To transfer a job as an SC Exchange format file, select *Send ASCII data*.
 - To receive an SC Exchange format file, select *Receive ASCII data*.
3. In the *File format* field, select SC Exchange.
4. Select the device you are sending to or receiving from. If necessary, change the required settings.

Note – If you do not have a PC card in the TSC1 data collector, the option to transfer to and from the PC Card is unavailable.

5. Press or , then follow the instructions on the screen to complete the transfer.

Coordinate System Changes

This section outlines the changes made to the coordinate system library.

The Trimble Survey Controller software has the following new coordinate systems:

- United Kingdom: new OS National Grid (OSTN97) zone
- Germany:
 - new Bayern 12 zone
 - new BW 9 zone
- Belgium: new Lambert 72 zone

The following changes have been made to the existing coordinate system zones:

- Denmark:
 - Zone 34 (Zeeland) has been renamed to System 34 (Zeeland)
 - Zone 34 (Jutland) has been renamed to System 34 (Jutland)
 - Zone 45 (Bornholm) has been renamed to System 45 (Bornholm)
- US State Plane 1927:
 - Alaska Zone 7 5007: false easting has been corrected from 213360.643496 m to 213360.4267 m (700,000 USft)
- Singapore:
 - PSA Grid: datum transformation has changed from Kertau 1948 (seven parameter) to Kertau 1948 (molodensky).

The following coordinate system zone is not supported:

- Irish map grid: Ireland zone

Other Changes

In addition to the new features, the following changes have been made in the version 7.70 release of the Trimble Survey Controller software:

- The setting for the quadrant bearings angle unit is now retained in the version 7.70 .dc file when you transfer a job from the Trimble Geomatics Office version 1.50 software.
- When you stake out a road or a slope from a line or curve, using a robotic instrument operated remotely from the target, the graphical display indicates the direction of the arrow from the target (prism) to the instrument.
- When you stake out a road defined only as a horizontal alignment, using the *Station and offset* method, the Road deltas in the graphical display are shown.
- When your road definition includes a spiral that begins and ends on arcs that have radii differing by less than 2%, the spiral is calculated correctly.

Using the Trimble Survey Controller Version 7.70 with the Trimble Geomatics Office Version 1.01 Software

The Trimble Survey Controller version 7.70 software has been optimized for use with the Trimble Geomatics Office version 1.50 software. You can also use it with Trimble Geomatics Office version 1.01, but some functions will not be available.

Use the Data Transfer utility to transfer version 7.50 .dc files between the Trimble Survey Controller and the Trimble Geomatics Office software.

When you transfer a Trimble Survey Controller version 7.70 job file as a version 7.50 .dc file, note the following:

- Version 7.50 .dc files do not contain wide area RTK solution type records.
- Version 7.50 .dc files do not contain the quadrant bearings angle unit record.

