Trimble Survey Controller™

RELEASE NOTES

Version 12.45

Revision A

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Trimble®

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Release Notes

Corporate Office

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Release Notice

This is the September 2009 release (Revision A) of the *Trimble Survey Controller Release Notes*. It applies to version 12.45 of the Trimble Survey Controller software.

Product Information

This section contains information about the Trimble Survey Controller™ software version 12.45 running on a Trimble® CU or TSC2® controller ("the controller"). For detailed information, refer to the *Trimble Survey Controller Getting Started Guide.*

The Trimble Survey Controller software version 12.45 does not run on an ACU or TSCe™ controller.

New user

In a new controller, the Trimble Survey Controller software version 12.45 and the Microsoft® Windows® operating system are already installed.

To use the software in a language other than English, you must transfer the language pack file from the *Trimble Survey Controller Software CD* to the controller.

To participate in the Trimble Solution Improvement Program , select *Trimble Survey Controller Installation / Trimble Solution Improvement Program* from the *Trimble Survey Controller Software CD.*

Upgrading from a previous version of the software from Trimble.com

You can upgrade to the Trimble Survey Controller software 12.45 from www.trimble.com/tsc_ts.asp?Nav=Collection-46260. Use the web installation instructions available from there.

Is my warranty valid? How do I get an Upgrade Authorization Key?

To run Trimble Survey Controller software version 12.45, you must have a valid warranty agreement.

Software warranty expiry date	What to do…
10/2008 or later	You are entitled to an upgrade to version 12.45 at no charge. Download and install version 12.45.
9/2008 or earlier	You do not have a valid warranty agreement. Contact your Trimble distributor, provide your controller serial number and order an extended warranty. Download and install version 12.45.

When you upgrade to version 12.45, a version 12 key is automatically created if a valid version 11.xx key is present.

For more information about warranties and upgrades, refer to the Upgrade support note, which is available from www.trimble.com/tsc_ts.asp?Nav=Collection-46260.

Upgrading from a previous version of the software from the Trimble Survey Controller software CD

There are seven main steps, but you may not need to complete them all. Follow the prompts in the installation wizard:

1. If you do not already have Microsoft ActiveSync® technology version 4.2 installed, install it from the *Trimble Survey Controller Software CD.*
2. Select *Update Office Software.*

3. Check if you need to upgrade the operating system.

   To use the Trimble Survey Controller software version 12.45, your controller must be running a Microsoft Windows operating system the same as or later than that shown below.

Controller	Microsoft Windows operating system	Firmware Version	First released with Trimble Survey Controller version
Trimble CU	Microsoft Windows CE .NET Version 5.0	5.0.0.25	12.40
Trimble TSC2	Microsoft Windows Mobile® Version 5.0 Software for Pocket PC	5.0.3	11.30

   - The operating system for the Trimble CU and TSC2 controller is available on the CD, from *Additional Utilities.*
   - To upgrade the operating system on the controller, the office computer performing the upgrade must be running one of the following operating systems: Microsoft Windows 2000 (with Service Pack 3), or Windows XP (with Service Pack 2).
     The Microsoft Windows Me, Windows 95, Windows 98, and Windows NT operating systems are not supported.

   The latest operating systems are also available from the Trimble website (www.trimble.com).

4. Select *Trimble Survey Controller Installation* and then select *Install Survey Controller Software.*

   Note - *As you install the software, make sure that you select the option to download the contents of the Trimble Data folder. This safeguards the data in the folder. Unlike some earlier versions, the Trimble Survey Controller version 12.45 software installation does not back up the Trimble Data folder to Trimble Data V10.*
   Once you accept this step, the contents of the Trimble Data folder are removed, regardless of whether or not you accept the option to download the contents.

   During installation, you have the option to participate in the Trimble Solution Improvement Program.

5. To transfer a new language pack to the controller, select *Install Language Pack.*
6. If applicable, select *Transfer downloaded Trimble data files* to transfer compatible files back onto the controller.
7. If applicable, select *Antenna and Receiver Configuration file update* to update the antenna and receiver files on your office computer.

Trimble Solution Improvement Program

The Trimble Solution Improvement Program collects information about how you use Trimble programs and about some of the problems you encounter. Trimble uses this information to improve the products and features you use most often, to help you to solve problems, and to better meet your needs. Participation in the program is strictly voluntary.

If you select to participate, a software program is installed on your computer. Every time that you connect your controller to this computer using ActiveSync technology or the Windows Mobile Device Center, Trimble copies the log file generated by Trimble Survey Controller. The log file is sent to our server automatically and we then parse it for usage information to create statistics about what our equipment is being used for, what software functions are popular in specific geographical regions, and how often problems occur that we can correct in our products. You can uninstall the program at any time.

The Trimble Solution Improvement Program can be installed during the upgrade of the Trimble Survey Controller software or from the *Trimble Survey Controller Software CD.*

Converting job and style files and transferring data after an upgrade

Note - You **cannot** copy old jobs onto the controller for the Trimble Survey Controller software to convert on-the-fly. You must use the *Transfer Downloaded Trimble Files* option on the *Trimble Survey Controller Software CD,* which converts the previously downloaded files and transfers them back onto the controller.

During an upgrade, you can choose to save all files in \Trimble Data on the controller to the office computer. Once you upgrade, you can transfer back onto the controller any files that are compatible with the Trimble Survey Controller software version 12.45.

To determine compatibility, the software inspects the files before transferring them to the controller. Job files from the Trimble Survey Controller software version 10.70 and later can be converted and transferred. A variety of other files (for example, .fal from version 10.7 and 10.8, .dc, .csv, .txt, .dtm, .ttm, .ggf, .cdg, .pjg, .sgf, .pgf, .dxf, .shp, .rxl, .crd, .inp, .mos, .xml, .mcd, .jxl, .ixl, .xsl, .sss, .jpg, .tsf, .sty, and .csd) can also be transferred back onto the controller.

Style files from the Trimble Survey Controller software version 11.30 and later can be converted and transferred.

A report of the transferred files is available at the end of this operation. The report lists the files that were converted, the files that were transferred, and the files that were not transferred (for example, the sc.log file).

During installation, new versions of the predefined ASCII import and export formats are installed to the controller. If you created new custom import or export formats or modified and **renamed** the existing formats, these files are now reinstalled to the controller during the *Transfer Downloaded Trimble Files* step of the upgrade process.
If you modified the predefined formats and saved them with the same name, they are replaced when you upgrade the controller. The downloaded files still exist on your office computer. If you create new formats or customize the predefined formats, Trimble recommends that you save the files with a new name. Use the Trimble Data Transfer utility or ActiveSync technology to transfer these files back onto the controller once the upgrade is complete.

The files are backed up in the following locations:

Office computer operating system	Backup location
Windows NT/2000/XP	C:\Documents and Settings\[user name]\Local Settings\Temp\[controller

	serial number]
Windows Vista®	C:\Users\[user name]\AppData\Local\Temp\[controller serial number]

To change the download folder, select *Browse.*

Using Trimble Survey Controller software version 12.45 with other Trimble products

Trimble Survey Controller software version 12.45 communicates best with the software and hardware products shown in the following tables. The software can also communicate with any version later than that shown.

Trimble Software	Version
Trimble Geomatics Office	1.63
Trimble Business Center	2.11
Trimble RealWorks® Survey	6.22
Trimble 4D Control	1.10
Trimble Link™ (AutoCAD Civil and Civil 3D 2009)	4.0.1
Data Transfer	1.47
Trimble Total Control™	2.73
Terramodel®	10.50

Trimble Receiver	Version
Trimble R8 GNSS	4.10
Trimble R6	4.10
Trimble R4	4.10
5800 II	4.10
Trimble R7 GNSS	4.10
Trimble R5	4.10
5700 II	4.10
Trimble R8	2.32
5800	2.32
Trimble R7	2.32
5700	2.32
4800	1.30
4700	1.30

Trimble Instrument	Version
Trimble VX™ Spatial Station	R11.0.80
Trimble S3 total station	M1
Trimble S6 total station	R11.0.80
Trimble S8 total station	R11.2.4

Trimble 5600 Series	696-03.08
Trimble ATS	696-03.08
Trimble M3	1.10
Trimble 3600 Elta CP (with interpreter)	1.15
Trimble 3600	2.00
Trimble 3300 Series	5.65

Notes

- If you use a Trimble VX Spatial Station or Trimble S Series total station with the Trimble Survey Controller software version 12.00 or later, you must upgrade the instrument to firmware version **R5.1.18** or later. The Trimble Survey Controller software version 12.00 is not compatible with earlier firmware versions on these instruments.
- If you use a Trimble VX Spatial Station or Trimble S Series total station with the Trimble MultiTrack™ target, you must upgrade the instrument to firmware version **R7.0.35** or later.
- If you use a Trimble R8 receiver with a TSC2 controller and GPRS, you must upgrade the receiver to firmware version 2.24 or later.
  Trimble R8 receivers with firmware version 2.24 or later do not support GPRS with the Trimble Survey Controller software version 11.05 or earlier.
- Trimble instrument firmware is available on www.trimble.com.

Updating office software

Note *- If you have GPS Pathfinder® Office software version 2.51 or later installed, make sure that the Connection Manager utility is closed before you update the office software.*

Before using Trimble Survey Controller software with Trimble office software, update the office software. To do this, select *Update Office Software* from the main menu on the *Trimble Survey Controller Software CD.*

The Trimble Survey Controller software version 12.45 uses a version 10.7 DC file.
If you use Trimble Geomatics Office™ software, Trimble recommends that you update the Trimble Geomatics Office software from version 1.60 to 1.63. This option does not update versions of Trimble Geomatics Office that are earlier than version 1.60.

Trimble office software updates are available from www.trimble.com.

Although Trimble Survey Controller software version 12.45 can output a version 10.0 DC file to older versions of the office software, the process does not support all new records and some information may be lost.

If you have a new GNSS receiver or a new GNSS antenna, you may need to update some of the components in your office software for it to recognize the new equipment. To do this, select *Additional Utilities / Antenna and Receiver configuration file update* from the *Trimble Survey Controller software CD* and then follow the installation wizard instructions. Alternatively, you can update to the latest files using the *Trimble Office Configuration Files Update Utility* on the Trimble website.

Upgrading Trimble 3600 and 5600 instrument firmware

If you need to upgrade the Trimble 3600, 5600, or ATS instrument firmware, return the instrument to your Trimble service center.

New Features

This section summarizes the major changes in the Trimble Survey Controller software, for the **Trimble CU and TSC2 controllers.**

For more information about the features, refer to the *Trimble Survey Controller Help* or the *Trimble Survey Controller Getting Started Guide.*

***Note** - The help is also provided on the Trimble Survey Controller Software CD in a PDF document, which you can search or print.*

GNSS enhancements

Trimble R4 and R5 GNSS receivers are now supported.

TDL 450L radios are now supported.

NTRIP version 2.0 is now supported.

NTRIP version 2 includes improvements to the original standard. The Trimble Survey Controller software now supports the following NTRIP version 2 features:

NTRIP 2.0 feature	Advantages over 1.0
Full HTTP compatibility	Addresses proxy server issues. Supports virtual hosts using the "Host directive".
Chunked transfer encoding	Reduces data processing time. More robust data checking.

Stakeout delta display is split into two controls so that you can configure one default for point stakeout and another default for arc, line, alignment, and road stakeout. For example, this enables you to set Go in and Go out display for point stakeout, and Stationing and Offset display for line stakeout and then switch between the stakeout methods without needing to reconfigure the display setting each time.

Conventional enhancements

Trimble S3 total stations are now supported.

Auto focus is now available in more functions throughout the Trimble Survey Controller software.

When Auto focus is enabled, the instrument automatically focuses whenever it turns to a point during Station setup, Station setup plus, Resection, Station elevation, Measure rounds, Measure topo, Stakeout, and Turn to.

Notes

- Auto focus is available only on an Auto focus-calibrated Trimble VX Spatial Station and Trimble S8 total station with instrument firmware R11.0.76 or later.
- New instruments are shipped with Auto focus calibrated in the factory. When upgrading from an older version of the instrument firmware, you must first calibrate Auto focus using the [Adjustment / Autofocus calib.] function on the instrument face 2 display.
- To enable Auto focus, select the *Auto focus* check box from *Instruments / Instrument settings.*

Compensator calibration for a Trimble VX Spatial Station or Trimble S Series total station. The Trimble Survey Controller software can now perform this calibration when the controller is connected robotically to the instrument.

Service information. You can now check when your instrument is next due for a service.

General enhancements

Service providers

The mobile network operators list, that is stored in the ServiceProviders.xml file, has been updated to include settings for many additional operators around the world.

Coordinate System database updates:

- Australia - GDA datum transformations and ACT Standard Grid Co-ordinates zone definitions
- China - datum transformation and 3 degree zone definitions
- Greece - datum transformation and zone definitions
- Iceland - zone definition
- Jamaica - datum transformations and zone definitions
- Netherlands - datum transformation and zone definition
- New Zealand - datum transformations and zone definitions

False Easting and false Northing values of up to 100000000 are now supported.

New Custom ASCII export style sheets

You can access new and updated Custom Export Style Sheets from:
www.trimble.com/tsc_ts.asp?Nav=Collection-32914

Known issues: Resolved in version 12.45

This section summarizes known issues that are resolved in the Trimble Survey Controller software for the **Trimble CU and TSC2 controllers.**

Echo sounder depths are now correctly stored when measuring Continuous topo GNSS points with either the Fixed distance, Time and distance and Time or distance methods.

Integrated surveys no longer automatically switch to GNSS survey mode when initialization status messages appear during a conventional survey.

Use last now retains the correct orientation after the controller unexpectedly shuts down.

GPS Search and Integrated Surveys. When using a Trimble survey grade GNSS receiver in an integrated survey with a job that has a projection and datum defined, an accurate relationship between the GNSS positions and local positions already exists using the Coordinate system definition, and GPS search is ready as soon as the Station setup is complete. In previous versions of the software, this did not always work when using a Geoid model.

Measure backsight, and Offset and Stakeout directions check boxes are now displayed correctly.

The True height and Bottom notch target label is now correctly displayed on measure forms. In previous versions of the software, when switching between a target configured to true height and a target configured to bottom notch, the label displayed on the measure form could get 'out of sync'.

Angle offset measurement in fixed scale Resection and Station Setup Plus where the fixed scale is not 1.0 now works correctly.

The Cut and Fill displayed in the map is now updated immediately after a target height change.

DXF arcs within a block are now drawn.

DXF redraw is now much faster when zoomed in close on a DXF file.

Null elevation values in DXF files, for example -9999.999, can now be specified.

Linked CSV file message. You no longer see an error message about a linked file from a previous job that could not be linked when creating a new job in a different folder.

Custom ASCII Import and Transformations. Assigning a transformation while importing points in a custom ASCII file now works correctly.

Tangency of horizontal alignment elements is now respected when importing roads from the Trimble Business Center software.

LandXML file to Trimble Road file conversions now include CrossSectPnt elements with offset elevation values when the delta offset or delta elevation from the previous element is 0.

When you measure a point using **Position on road** from the cross section view, the correct point is now stored regardless of where you are when you tap *Store.* In previous versions of the software if you accepted a

position but then moved before storing the position, the position at the time you tapped Store was saved, and not the position at the time you tapped Accept.

When staking one of the following, you can no longer store multiple positions after losing lock to the prism:

- Trimble roads or GENIO roads by Stake option Position on road
- Lines by Stake option To the line or Slope from line
- Arcs by Stake option To the arc or Slope from arc

LandXML files with vertical alignments containing vertical circular curves with negative radii are now supported.

Some LandXML files with vertical points of intersection (VPIs) at the start and end of the vertical curve, display an error when the road is saved as an RXL file or is staked out. This is caused by rounding errors that result in overlapping vertical curves. These VPIs are not required.
To resolve this issue, use the ASCII File Generator and the **LandXML to RoadXML** style sheet (both available from www.trimble.com/tsc_ts.asp?Nav=Collection-47680) to convert the LandXML file to an RXL file. This process deletes the unnecessary VPIs, and provides an RXL file that you can use directly with the Trimble Survey Controller software.

Initialization lost messages no longer appear when you first start a survey.

Initialization can now be maintained when roving with four GNSS satellites during a postprocessed kinematic (PPK) survey.

Changing Base radio mode. When changing the Base radio modes, the frequency no longer automatically defaults to the first in the list, unless the previously-selected frequency is no longer available.

Multistation RTCM when using internal GSM dial-in now works correctly.

Enfora card PIN numbers are now correctly sent to the modem in a Dial-in survey.

Field derived (FD) GNSS base records in the DC file are now correctly stored as coordinates.

Starting an RTK with WAAS survey now correctly enables the WAAS satellites.

Broadcast RTCM Grid files (*.rtd) associated with jobs in project folders can now be downloaded and converted using the Trimble Data Transfer utility.

Broadcast RTCM Grid files (*.rtd) are now reloaded onto the controller when jobs within project folders are upgraded.

Redial base data corrections. You can now successfully redial base data corrections for a connection involving a Bluetooth® device that is no longer switched on or is out of Bluetooth range.

Continuous Offsets are no longer available in a GNSS survey in a No projection / No datum or a Scale Only job. A full coordinate system definition is required to convert the WGS-84 observations to Grid for the offset calculations. No projection / No datum and Scale Only jobs do not meet this requirement.

The following improvements have been made to standard Trimble style sheets:

- The **Survey Report** style sheet no longer applies the distance conversion factor to the RMS values.
- The **Line - Stake markup** and **Arc - Stake markup** style sheets now have the design elevation labeled as the design elevation, not the V.Offset.

Application errors

You should no longer see occasional application errors when you do the following:

- Start Measure codes.
- Exit Rounds.
- Store and reorient to the backsight point after you deleted all the F1 and F2 observations to another point within the same station setup.
- Use the Filter in Point Manager.
- Key in Arc.
- Import fixed format files into a new job.
- Select or display a DXF file where the DXF file that was originally attached to the job was replaced by another file of the same name.
- Display a DXF file containing a spline without control points.
- Perform a station setup with GPS Search enabled.
- Start an Internet rover survey.
- Losing the connection to the GNSS receiver.
- Open the GNSS position screen while creating a new job.
- Stake a point with a DTM displayed in the map during a data logging survey.
- End an RTK and data logging survey when the Duplicate point out of tolerance form was displayed.

Tip - Install the Trimble Solution Improvement Program when upgrading your controller. Trimble has identified and resolved several of these issues after receiving log files from customers.

Other Information

Configuring the system options

The new Trimble Survey Controller systems are shipped unconfigured. They are configured automatically when you connect the controller to the instrument. Alternatively, select *Configuration/Options* and then select the option(s) appropriate for you:

- GPS users - select *GPS surveying*
- Conventional Total Station users - select *TS surveying*
- Integrated surveying users - select both options
- Helmert, Station Setup Scale factor users - select *Advanced Geodetic Support*

Note - Tunnel support is available only when the Engineering option is enabled on your controller, and you are connected to a Trimble VX Spatial Station or Trimble S Series total station.

For more information, refer to the *Trimble Survey Controller Help* or contact your local Trimble dealer.

These options control the styles that are available and the relevant options that appear throughout the software. You can reconfigure the Trimble Survey Controller system at any time.

Connecting a Trimble CU controller to the office computer

The Trimble CU controller communicates through the docking station to the office computer using USB. The docking station must be connected to the office computer through the USB-to-Hirose cable.
You cannot connect the Hirose-to-7-pin lemo cable to a 7-pin lemo-to-DB9 cable (supplied with GNSS systems) and use this to connect the docking station to the serial port on the office computer.

Connecting a TSC2 controller to wireless devices

On the TSC2 controller, when you connect to a device using wireless technology, the icon on the status bar at the top of the screen should be animated, showing that the connection is being attempted. Once the controller is connected, the icon should appear as two large arrows. This functions correctly in the operating system version 5.0.2, but not in version 5.0.3. However, if you click the icon, the *Connectivity* dialog correctly shows the connection status.

Memory requirements

When you open a Trimble Survey Controller job, the entire job is loaded into memory, which results in a more robust job and faster software operations. As the job becomes larger, memory requirements increase. In addition, improvements to the operating system and the software mean that Trimble Survey Controller software version 11.1 or later needs more memory than earlier versions.

Microsoft ActiveSync technology issues

Microsoft Explorer and the Trimble Data Transfer utility may sometimes fail to find the folders and display files on the controller. This can occur if another Microsoft Explorer window had been left browsing to the controller from a previous connection, or if the controller had been reset and a new connection made. To avoid this problem, make sure that you close all Microsoft Explorer windows before you disconnect the controller.

4000 Start Base

You now **cannot** start a Trimble 4000 SSE/SSi base receiver using the Trimble Survey Controller software version 12.00 or later.

You **can** start a Trimble 4000 SSE/SSi base receiver using the front panel of the Trimble 4000 receiver, or with a controller running the Trimble Survey Controller software version 11.3x.

Documentation

Trimble Survey Controller Help is "context-sensitive." To access the Help:

- On a Trimble CU controller, tap [?] at the top of the screen.
- On a TSC2 controller, tap [Start / Help] on the touch screen, or press [Fn + Space] on the keyboard.

A list of Help topics appears, with the relevant topic highlighted. To open the topic, tap its title.

The help is also provided on the *Trimble Survey Controller Software CD* as a single file in Adobe Portable Document Format (PDF). View this file on an office computer. You can use it to search for a particular topic or to print pages from the help.