RELEASE NOTES

Trimble® HYDROpro™ Software

Version 2.40
Revision A
October 2010

Trimble

Corporate office

Trimble Navigation Limited
Construction Business Area
5475 Kellenburger Road
Dayton, Ohio 45424-1099
USA

800-538-7800 (toll free in USA)
+1-937-245-5600 Phone
+1-937-233-9004 Fax
www.trimble.com

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Release notice

This is the October 2010 release (Revision A) of the *HYDROpro Software Release Notes*. It applies to version 2.40 firmware.

Notice to our European Union customers

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Meerheide 45
5521 DZ Eersel, NL

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an explanation of the problem.

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To receive information regarding updates and new products, please contact your local dealer or visit the Trimble website at www.trimble.com/register. Upon registration you may select the newsletter, upgrade or new product information you desire.

Introduction

These release notes accompany the release of the Trimble® HYDRO*pro*™ 2.40 software. They contain the latest information available about the HYDRO*pro* software. Read the release notes in conjunction with the relevant HYDRO*pro* documentation.

This document is arranged into chapters containing information about each HYDRO*pro* product, equipment handler changes, and general HYDRO*pro* information.

General

This section provides general information about changes to the HYDRO*pro* software.

Minimum PC specifications

Trimble recommends the following minimum computer specifications to run the HYDRO*pro* software:

- Hardware to be able to accept multi-serial port cards such as PCMCIA
- USB port to accept HYDRO*pro* Security Key
- Sufficient specifications to run one of the recommended operating systems

Trimble recommends that you use one of the following operating systems:

- Windows XP Professional edition
- Windows Vista Ultimate
- Windows 7 Professional
- Windows 7 Ultimate

The following operating systems are ***not supported***; Windows 95, 98, Me, Windows XP Home edition, Windows Vista Home, or Windows 7 Home editions.

Installation

Included in your HYDRO*pro* installation package are:

- *HYDROpro Terramodel 10.60 CD*

Note – *If you intend to use the Terramodel® software, install it before you install the HYDROpro software.*

- *HYDROpro 2.40 Software CD*
- USB Hardware Key
- Quick reference cards

USB hardware keys

The USB security key is shipped with all HYDRO*pro* systems.

1. Plug the USB key into any USB port.
2. Install the drivers before you install the HYDRO*pro* system. If your operating system does not automatically install the drivers when you plug in the USB key, do the following:
    a. Insert the *HYDROpro Software CD.*
    b. Select language.
    c. Select the *Install Lock Drivers* option.
3. Restart your computer.

Note – *If you do not install the Sentinel lock driver, the HYDROpro software cannot identify your USB security key, so it will run only in Demonstration mode.*

Installing the software

Two CDs are provided with your HYDRO*pro* system:

Install the Terramodel software first. If you do not intend to install Terramodel, see Installing the software, page 6.

Installing the Terramodel software

1. Insert the *Terramodel Installation CD* into the CD-ROM drive.
2. The CD automatically starts the installation program. Follow the instructions on the screens to install the software.

Installing the HYDRO*pro* software

1. Insert the *HYDROpro Software CD* into the CD-ROM drive. The CD automatically starts the installation program.
2. Select the I*nstall HYDROpro and Utilities* option. Follow the setup instructions for both the HYDRO*pro* and Terramodel 10 HDMS installations.

Note – *If you have already installed Terramodel, then as part of the HYDROpro installation, the Terramodel 10 HDMS software is also installed. This enables the HDMS toolbar in Terramodel, which is used to import and process cleaned survey data from the NavEdit software. If you did not install Terramodel, then Terramodel HDMS will not be installed.*

Note – *When you install the Survey or Construction modules of the HYDROpro software, the NavEdit software is automatically installed.*

3. Plug in the USB security key and run the HYDROpro software.

Flavor Selection utility

Use the Flavor Selection utility to select the flavor that HYDRO*pro* will use when you run the software. The utility also informs you which flavors are licensed, and which flavors are only available for use in Demo mode.

Access the information from the security key attached to the parallel port on the computer. If there is no security key attached, all flavors are only available for use in Demo mode.

To open the Flavor utility:

1. From the Windows task bar select *Start* / *Program Files* / *HYDROpro* / *Flavor*. The HYDRO*pro* Flavor Selection utility starts.
2. Select the product and associated flavor you require, and then click **OK**.
3. Restart the HYDRO*pro* software. The selected flavor becomes active.

By default, the last project opened by each Flavor will open when you next use that flavor. However, to open any project in any Flavor, select *File* / *Open*.

Using Navigation, Construction, and Remote software

Online Help

Generally, you can press F1 or click the Help buttons to get help on the highlighted menu item or dialog.

For help on a particular topic:

- Select *Help* / *Help Topics*.
- Use the *Contents*, *Index*, or *Search* tabs in the Help system to locate a specific topic.

Multi-language support

The HYDRO*pro* and NavEdit 2.40 software contains translation files for the following languages:

- Chinese (Simplified)
- English (United States)
- French
- Japanese
- Korean
- Portuguese (Brazil)
- Russian
- Spanish
- Russian

To change the operating language of your HYDRO*pro* system, select the Language utility from your HYDRO*pro* Utilities folder:

Note – *The Terramodel 10.60 software included in the HYDROpro 2.40 release is available in English, French, German, and Spanish.*

Using HYDRO*pro* on Asian versions of Windows XP

Before installing HYDRO*pro* on an Asian version of Windows XP, do the following:

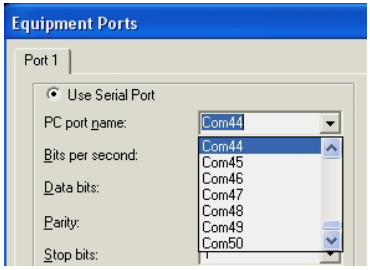
1. Go to *Control Panel* / *Regional and Language Options* / *Advanced* tab.
2. In the Language for non-Unicode programs group, select the asian language that you want to use (for example, Korean).

The HYDRO*pro* software

This release includes the following improvements.

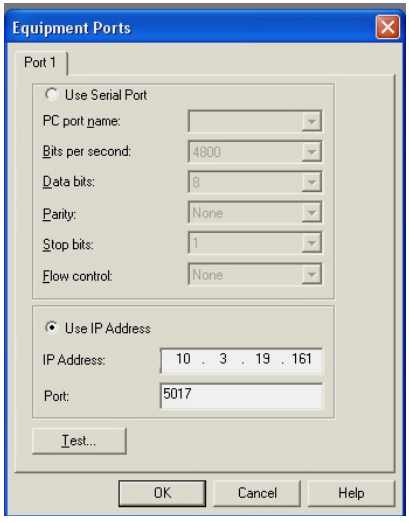
Serial ports

Serial ports are now accessible up to COM50. Previous HYDRO*pro* versions allowed the equipment handlers to access COM1 to COM25. This release now allows access from COM1 to COM50 and hence greater use of Virtual COM ports.



Ethernet support

Devices can now be connected through the Ethernet port or the Serial port. When the Ethernet port is selected, enter the *IP Address* and *Port* of the external device.

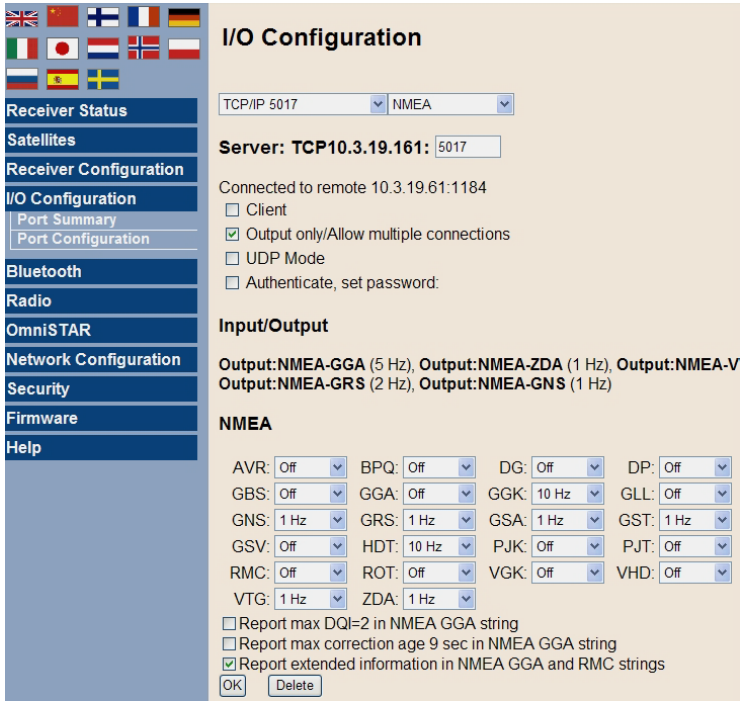


Worked example: NMEA output

The popular NMEA interface is often used in the HYDRO*pro* software. To set up the SPS Modular receiver (SPSx50, SPSx51, SPSx52) to output NMEA over Ethernet:

1. In the SPS receiver web interface, go to the *I/O Configuration* menu.
2. Select a TCP/IP port. As long as the SPS Modular receiver is connected to a LAN or directly to the HYDRO*pro* PC, then an IP address is allocated automatically.

   In the following example, it is 10.3.19.161. The SPS receiver allocates a Port address (in this example 5017), which you can change.
3. Decide which NMEA messages and output rates are required. The following example shows some standard messages for the HYDRO*pro* displays



4. In the HYDRO*pro* software, select the <GPS> NMEA Equipment. Select the *Use IP address* option and then enter the IP address and Port number.

AutoCAD DXF2000 support

The HYDRO*pro* software now supports DXF2000+ formats. Before this release, the software supported only earlier DXF Rx and DXF2000 formats.

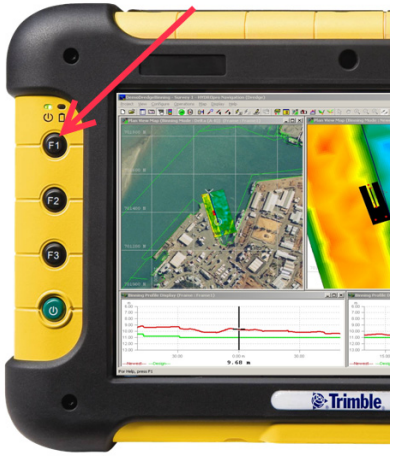
Tip – When generating DXF files for use in the HYDRO*pro* software, ***do not*** create PolyFaceMeshes as they will not display correctly.

F7 (User-Defined Event) function key

This key is now available while in Operator Mode in the Survey, Piling, and Rig modes. This is useful when piling or drilling. The operator would have located the pile or drill in the correct location and wants to record its position and load up the next Guidance Object (next Pile/drill location). The Operator simply presses F7.

At this stage a record of position is made into the database and the event symbol can change color to signify the task is complete. You can also set the software to automatically load the next guidance object (the next pile location) when F7 is pressed. Configure these actions using the *Advanced* / *Events* menu.

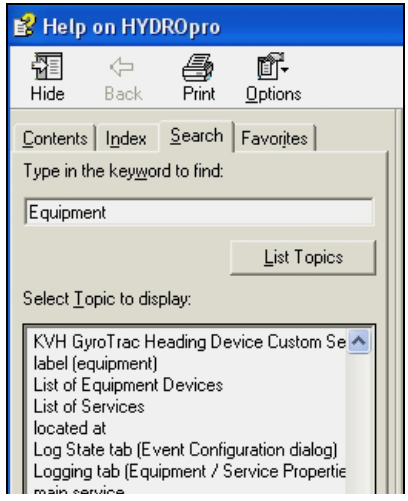
You can access the F7 (User-Defined Event) key through the F1 Function button on the Trimble Tablet. This means that the operator does not need an external keyboard:



Online Help

Online Help is now available on Windows Vista and Windows 7 operating systems without having to load the Windows patch file.

Tip – To find the details of the data string format and how to use a specific device DLL, open the Help and select the *Search* tab. Enter **Equipment** and then click **List Topics**.



The Terramodel software

The HYDRO*pro* 2.40 software release includes Terramodel 10.60 on its own CD-ROM.

If you require the Terramodel software to be installed, install it ***before*** you install the HYDRO*pro* software. The HYDRO*pro* installation will install the Terramodel HDMS

2.0.0 add-on menu into the Terramodel software. The HYDRO*pro* software 2.40 loads Terramodel HDMS 2.0.0.

To get the latest update to Terramodel, install version 10.60 and then go to www.trimble.com/support to download the latest update. As of September 2010, version 10.61 is the latest version of the Terramodel software.

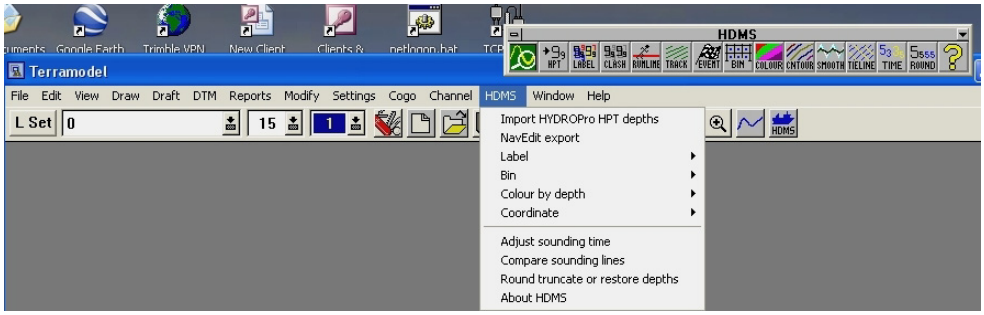
The Terramodel HDMS menus are now available on the main menu as well as the floating menu bar. See the figure below.

To obtain this feature, go to the HYDROpro Support pages in www.trimble.com/support and in the HYDROpro Equipment Handler pages there is a file HDMS_menu.m.

To load the menu system:

1. Save the HDMS_menu.m file to:
   C:\Program Files\Trimble\Terramodel\Locale\English
2. In Terramodel, select menu option:
   File / *System Configuration* / *Change Menus*.

3. Select C:\Program Files\Trimble\Terramodel\Locale\English\HDMS_menu.m.



Equipment handlers

Equipment Handler changes are available in all HYDRO*pro* Navigation, Construction, and Remote products.

Information about the .dll files for these equipment handlers are included in the HYDRO*pro* Help. More information is available from the Trimble website (www.trimble.com/support.html). Select the HYDRO*pro* product that you have purchased and then click **Downloads**.

Trimble Modular GNSS receiver support

Support for the Trimble Modular GNSS receivers is now available in the "SPSx5x" named device handler and includes the following models:

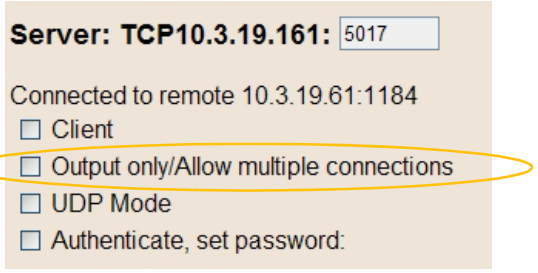
- SPS550
- SPS550H
- SPS551
- SPS551H
- SPS751
- SPS851

- SPS351
- 9200-G2
- SPS552H
- SPS852

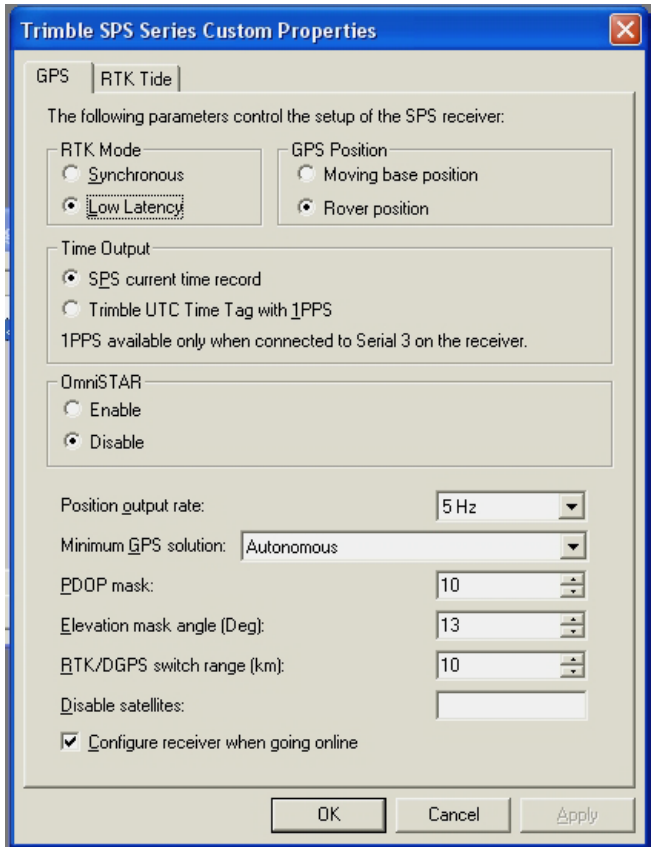
Notes:
– When setting up the serial device in the HYDROpro software, select a baud rate such as 38K. Do not change the baud rate once you have selected it and been online. If you do change the baud rate, then you may need to set all the GSOF outputs (on the selected port) off.
– When using the IP interface, make sure that the Output only/Allow multiple connections check box is cleared. See *Worked Example: SPS Modular Interface using Ethernet, page 16**.*
– When using a serial or IP interface, this driver can take a number of seconds until you see data flow to the software. This is due to the "handshaking" required to configure the receiver. If you get a time-out of data once you have successfully been online once and got data flowing into the software, immediately go offline and then select the Equipment menu. Select the GPS device and then select the Custom menu. Clear the "Configure Receiver when going online" check box. This is due to the amount of data coming out of the GPS receiver and the communications struggling to try send reset commands. If the software does not decode the GPS data and times out, you may have to set all the GSOF outputs (on the selected receiver port) off.
– This driver does not work with version 4.17 firmware in the SPSx5x receiver. It does work for versions prior to 4.17 and later than 4.17.

Worked Example: SPS Modular Interface using Ethernet

Note – *Before you use this SPSx5x DLL, you must go to the web interface of the SPS Modular receiver and then go to the I/O Configuration menu. Select a TCP/IP setup and then clear the Output only/Allow multiple connections option as shown in the screen below:*



To save effort configuring the SPS Modular receiver, use the SPSx5x DLL in the HYDRO*pro* software. In this case, you do not need to set up messages or other factors such as minimum elevation angle in the receiver. Instead, configure the parameters in the HYDRO*pro* SPSx5x Custom screen setup as shown below.



Trimble Smart GNSS Antenna support

Support for the Trimble Smart GNSS Antenna is now available in the "SPSx8x and R Series" equipment handler and includes the following models:

- SPS881
- 5800 II
- R8 Model 3
- SPS882

Notes:
– When setting up the device in HYDROpro Equipment menu select a baud rate such as 38K. Do not change the baud rate once you have selected it and been online once. If you do change the baud rate then you may have to set all the GSOF outputs (on the selected port) off.
– This driver can take a number of seconds until you see data flow to the software. This is due to the "handshaking" required to configure the receiver. If you get a time-out of data once you have successfully been online once and got data flowing into the software, immediately go offline and then select the Equipment menu. Select the GPS device and then select the Custom menu. Clear the "Configure Receiver when going online" check box. This is due to the amount of data coming out of the GPS receiver and the communications struggling to try send reset commands. If the software does not decode the GPS data and times out, you may have to set all the GSOF outputs (on the selected receiver port) off.
– This driver does not work with version 4.17 firmware in the SPSx8x receiver. It does work for versions prior to 4.17 and later than 4.17.

Trimble SPS361 and SPS461 Dual Antenna heading GPS receiver support

In addition to the standard <GPS> services, the SPS Series receiver can provide the following services:

- Attitude – Provides either the pitch or the roll, but not both. Can be configured in the Custom properties.

- Heading – Provides the Azimuth from the Vector antenna (2) to the Position antenna (1).
- Tide – Provides an averaged RTK Height relative to your chosen datum (WGS-84 by default)
- Heave – Provides a heave value being the difference between the Tide value and the RTK Height at each GPS Position update.

Note – *A Heave service is always available if there is a GPS Position service providing RTK Fixed Int position updates, even if there is no Tide service configured.*

This equipment handler has a powerful capability in the *Vector* tab.

This tab enables you to configure the slope (pitch or roll) and heading adjustments set in the SPSx61 and to calculate the slope adjustment value based on either the raw slope value of the vector between the two antennas or from the known vertical antenna separation. Heading adjustment can be applied in either the receiver or the service properties in the HYDRO*pro* software. If you intend to set the adjustment in the receiver use the first method below, otherwise select one of the other methods and set the adjustment in the Heading Service properties.

There are three methods to choose from:

- Preconfigured (No change) – This method assumes the heading and attitude adjustments in the receiver have been correctly configured and that no change will be made to that configuration when going online.

Note – *If the heading or attitude has been adjusted in the receiver and an adjustment has also been configured in the Service properties of the HYDROpro software, then both adjustments are applied.*

- Set Slope and Heading adjustments to zero – This method removes any adjustments set in the receiver for heading and attitude

- Calibrate slope adjustment and set heading adjustment to zero – This method sets the heading adjustment to zero in the receiver and determines the slope adjustment by one of two methods when going online. The two methods are:
  - Zero using Raw Slope – Use this to measure the adjustment and zero the slope when the vessel or vehicle is static and level.
  - Calculate using delta antenna height – Use this to calculate the adjustment and zero the slope when the vertical difference between the antenna phase centers is known relative to the vessel or vehicle reference frame. This method can be used to calibrate the pitch or roll on a moving vessel.

Additional configuration settings are available to adjust the attitude output:

- Slope Direction – Select either Normal or Reversed to configure the direction of the pitch or roll vector. The effect is that the sign of the pitch or roll is changed.
- Slope orientation – Select either Pitch or Roll to determine which data field is populated in the attitude message which is decoded by the HYDRO*pro* software. In practice the antennas should be orientated either at 90° to the vessel center line (for example, on opposing bridge wings) for Roll or on the vessel centre line for Pitch.

NMEA support

The HYDRO*pro* software now decodes the Status 13 (Beacon DGPS) from the Trimble proprietary GGK message.

Kongsberg USBL support

Support for the Kongsberg 400 USBL is now available. To track a transponder in the HYDRO*pro* software, you must enter its code as numeric characters. For example, if tracking Transponder B24, remove the letter "B" when entering it, that is, enter **24**.

Syqwest Echosounder

The HYDRO*pro* software now supports the Syqwest echosounder from the USA. The support is for the single- and dual-frequency echosounders. The HYDRO*pro* software can send fix marks and annotations to the echosounder.

Coordinate System Manager

The Coordinate System Manager 2.70 software is installed with the HYDRO*pro* 2.40 software. If the Current.csd file is already installed on the computer and you choose to overwrite it during the HYDRO*pro* installation, a backup copy (Current.bak) of the overwritten Current.csd is created. This ensures that no information is lost during the installation process.

NavEdit software

The NavEdit software, which is supplied, has not changed since version 2.32.