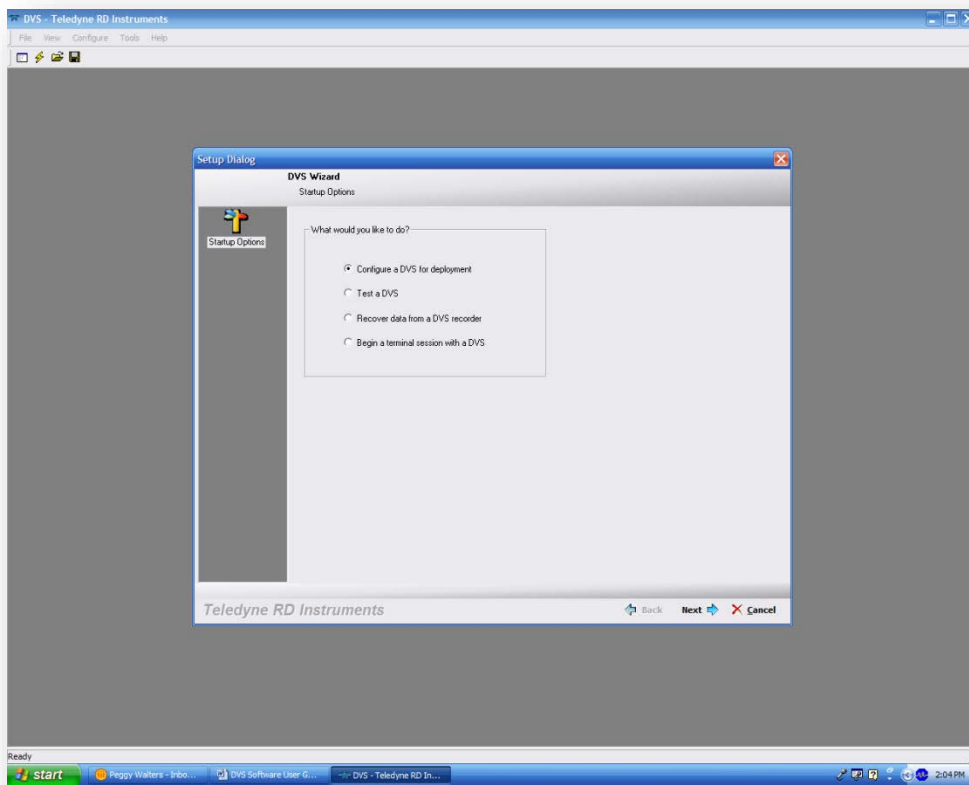


DVS™

Software

User's Guide



P/N 95B-6037-00 (November 2011)

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Revision History

November 2011

- Updated software history section
- Updated styles and fonts used in manual

September 2008

- Updated software history and minor changes to screen captures.



DVS Software User's Guide

1 Introduction

This guide is an overview on using the DVS¹ software provided with your system. The *DVS* program allows the user to create a deployment file. After creating a deployment file (or loading an existing file) the *DVS* program will continue with the testing, deployment, and recovery of data.



NOTE. This guide covers *DVS* software version 1.05.



CAUTION. This *DVS* Software applies to *DVS* Phase I systems with firmware version 41.xx. For systems with 55.xx firmware, use the *DVS* Phase II software. The software is not backward compatible.

1.1 How to Contact Teledyne RD Instruments

If you have technical issues or questions involving a specific application or deployment with your instrument, contact our Field Service group:

Teledyne RD Instruments

14020 Stowe Drive
Poway, California 92064

Phone +1 (858) 842-2600

FAX +1 (858) 842-2822

Sales – rdisales@teledyne.com

Field Service – rdifs@teledyne.com

Teledyne RD Instruments Europe

2A Les Nertieres
5 Avenue Hector Pintus
06610 La Gaude, France

Phone +33(0) 492-110-930

FAX +33(0) 492-110-931

Sales – rdie@teledyne.com

Field Service – rdiefs@teledyne.com

Client Services Administration – rdicsadmin@teledyne.com

Web: <http://www.rdinstruments.com>

24/7 Technical Support +1 (858) 842-2700

¹ DVS is a registered trademark of Teledyne RD Instruments, Inc.

1.2 System Requirements

The *DVS* software requires a Windows® compatible computer with the following specifications:

- Windows XP® or Windows 2000®
- Pentium III 600 MHz class PC (higher recommended)
- 64 megabytes of RAM (128 MB RAM recommended)
- 50 MB Free Disk Space plus space for data files (A large, fast hard disk is recommended)
- One Serial Port (two or more High Speed UART Serial Port recommended)
- Minimum display resolution of 1024 x 768, 256 color (higher recommended)
- CD-ROM Drive
- Mouse or other pointing device

1.3 Software Installation

To install the *DVS* software, do the following.

- a. Insert the compact disc into your CD-ROM drive and then follow the browser instructions on your screen. If the browser does not appear, complete Steps “b” through “d.”
- b. Click the **Start** button, and then click **Run**.
- c. Type **<drive>:launch**. For example, if your CD-ROM drive is drive D, type **d:launch**.
- d. Follow the browser instructions on your screen.

Once installed, you will have a shortcut added to your Windows® **Start** menu, **RD Instruments** folder and a desktop icon.

1.4 Conventions Used in this Guide

Conventions used in the *DVS* Software User's Guide have been established to help you learn how to use these programs quickly and easily.

Windows menu items are printed in bold: **File** menu, **Exit**. Items that need to be typed by the user or keys to press will be shown as <F1>. If a key combination were joined with a plus sign (<ALT+F>), you would press and hold the first key while you press the second key. Words printed in italics include program names (*DVS*, *BBTalk*) and file names (*test.dvs*).

Code or sample files are printed using a fixed font. Here is an example:

```
DVS
RD Instruments (c) 2011
All rights reserved.
Firmware Version: 41.xx

FIRMWARE BUILD: Nov  5 2011 02:18:41

Closing recorder
```

You will find two other visual aids that help you: Notes and Cautions.



NOTE. This paragraph format indicates additional information that may help you avoid problems or that should be considered in using the described features.



CAUTION. This paragraph format warns the reader of hazardous procedures (for example, activities that may cause loss of data or damage to the ADCP).

2 Using the DVS Software

The program *DVS* is designed to take a user from the planning stage through data recovery.

2.1 Starting the DVS Software

- a. In *Windows*, click **Start, Programs, RD Instruments, DVS** (default location – use your installation settings if different). The *DVS software* will start and display the **DVS Wizard Startup Options** screen.

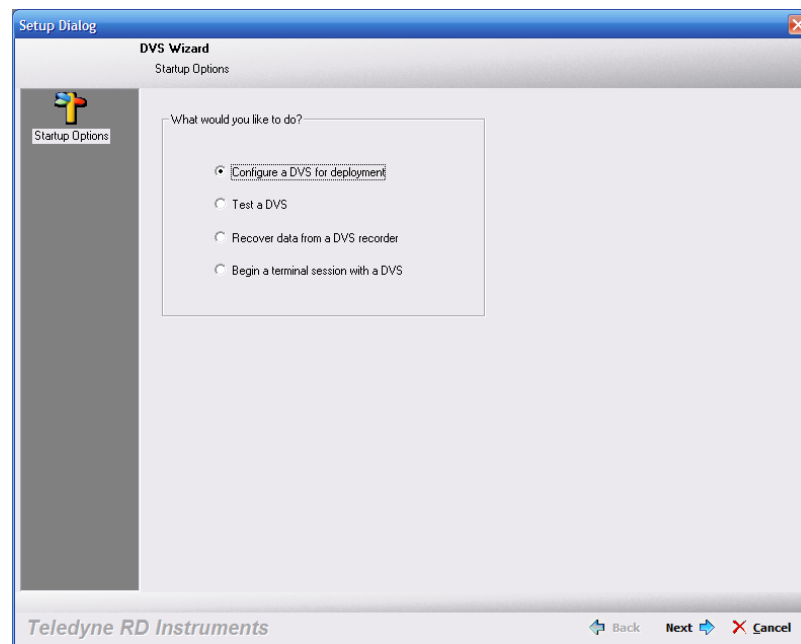


Figure 1. DVS Startup Options Screen

- b. The **DVS Wizard Startup Options** screen provides quick access to the most often used functions of the *DVS* software. You may select one of the functions and click **Next** or click **Cancel** to begin using *DVS*.
 - **Configure a DVS for a new deployment** – This will create a new deployment file and start the deployment wizard (see [Deployment Wizard](#)).
 - **Test a DVS**– this will start the testing portions of the deployment wizard (see [5 Test the DVS](#)).

- **Recover data from a DVS's recorder** – This will open the recover data screen (see [Recover Data](#)).
- **Begin a terminal session with a DVS**– This will open a terminal window and allow you to “talk” to the DVS unit (see [DVS Terminal](#)).

2.2 Setup DVS RS232 Communication

The DVS software assumes the last communication protocols configured are correct and opens directly to the **DVS Wizard Startup Options** screen. However, the first time the software is run it is unlikely that the default protocols will apply. Therefore, on the first start up, do the following.

- Connect and power up the DVS unit as shown in the DVS User's Guide.
- Start the *DVS* software.
- At the **DVS Wizard Startup Options** screen, click **Cancel**.
- From the **Configure** menu, click **Serial Communications**.

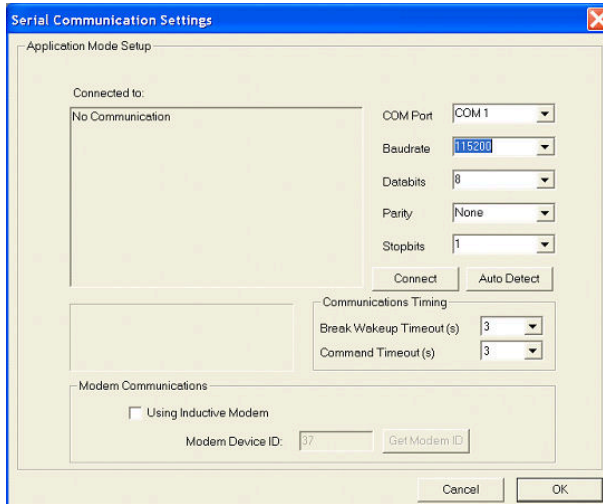



Figure 2. Communication Setting - RS232 Configuration

- Select the COM port, baud rate, parity, and stop bits that the DVS unit is connected to. If you are unsure of the setting, click the **Auto Detect** button.
- Click **Connect**. You should see the wakeup message appear on the deployment log window. For example;

```
DVS
RD Instruments (c) 2006
All rights reserved.
Firmware Version: 41.xx
```

```
Closing recorder
```

- Click **OK**.

 **NOTE.** Once you establish communications with the DVS unit for the first time, the *DVS* software uses the same settings for future communications.

2.3 Configure the Inductive Modems

This section describes how to setup communications with a DVS unit and how to verify communication with the inductive modems.

2.3.1 System Setup

The DVS system has an assumed bench top configuration consisting of a surface IMM (a Sea-Bird Inductive Modem) connected to a PC through a serial port and independently powered (i.e. by a 9V battery). The surface modem is connected to a powered DVS device via the test cable. See the DVS User's Guide for an overview of the expected bench top setup for the DVS system.



NOTE. The modem communications have only been tested using Sea-Bird IMM's with a firmware version of 0.99A or higher. The surface IMM used to communicate with the DVS device will need to have this firmware version to ensure proper communications.

Both the surface IMM and the IMM built into the DVS system can be configured with the *DVS* software. The surface IMM will need to be configured using this process in order for the software to successfully communicate with the DVS device. The DVS IMM is pre-configured upon delivery from Teledyne RD Instruments. However, this process can be run to ensure that the DVS device has the correct settings or to reset it to a valid state if settings are changed accidentally.

2.3.2 Configure Serial Connection to Surface IMM

The first step is to configure the serial connection to the surface IMM.

- a. Connect and power up the DVS unit as shown in the DVS User's Guide.
- b. Start the *DVS* software.
- c. At the **DVS Wizard Startup Options** screen, click **Cancel**.
- d. From the **Configure** menu, click **Serial Communications**.
- e. Select the appropriate COM port (i.e. the port that the surface modem is connected to).
- f. For the baud rate, select 9600. Serial communications with the IMM's should always be set to 9600 baud.



NOTE. The inductive modems actually communicate with each other at a baud rate of 1200, and do not support communication with the DVS system at baud rates above 9600.

- g. Leave the other settings at their default values as shown in Figure 3.

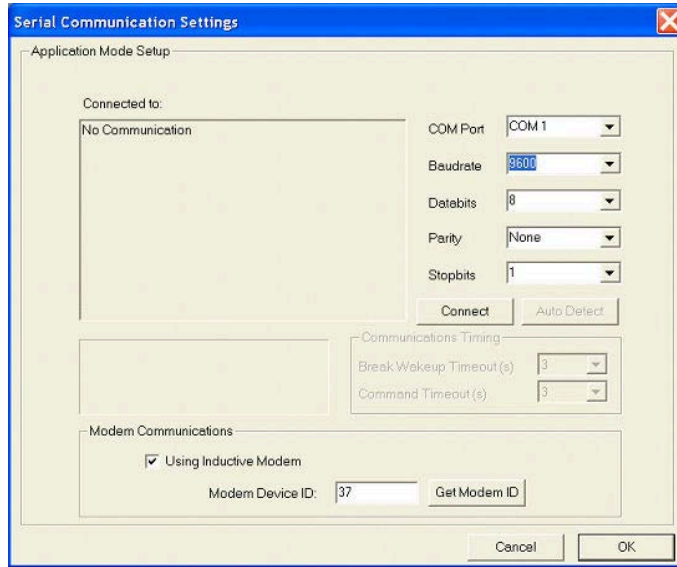



Figure 3. Communication Setting – Inductive Modem Configuration

- h. Select the **Using an Inductive Modem** box and click the **Get Modem ID** button.

 **NOTE.** You do not need to check the **Using Inductive Modem** box to specify the modem communication settings. The DVS modem configuration process will fill in these settings for you.

- i. Press the **OK** button to close the **Serial Communication Settings** dialog.
- j. On the **Configure** menu, select **Modems**. This will launch the dialog shown in Figure 4 below. Select which modem(s) you wish to configure (i.e. the surface IMM connected to the serial port and/or the DVS IMM).

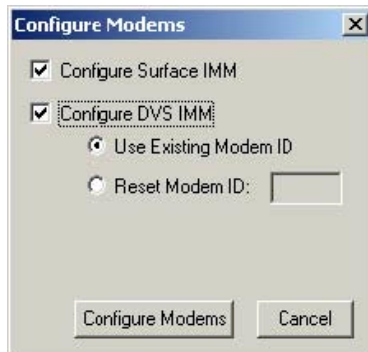


Figure 4. Configure Modems Dialog

- k. If you are configuring the DVS IMM, you have the option of **Use Existing Modem ID**, or **Reset Modem ID** (from 00 to 99).



NOTE. The DVS Modem ID that is configured will be applied to the software serial communication settings for future modem communications.

The DVS IMM can only be configured when it is the only device on the line.

1. Press the **Configure Modems** button to start the configuration process. The dialog will update with a status bar and information on the configuration steps being run. The configuration process will take a few minutes to complete. Once the process is completed, a message box will appear letting you know that the selected configuration(s) are completed (See Figure 5 below).

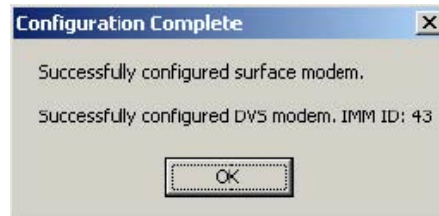


Figure 5. Configuration Complete Message Box

If the modem configuration process does not complete successfully, check the serial connection from the PC to the surface IMM, and the connection to the DVS system (if you are attempting to configure the DVS modem). If the connections look correct and the modem configuration still fails, you will need to test your modem connections. The DVS Operation Manual describes how to verify modem communications.

3 Planning a Deployment

The *DVS* software uses a wizard to step you through a series of self-explanatory pages to configure the desired profiling range and resolution, the number of ensembles per hour, and the time/date to start the deployment. Once the planning portion of the wizard is complete, it leads to the **Deployment Settings** page where the final steps can easily be completed to deploy the DVS system.

3.1 Saving Deployment Files

Save the deployment file by clicking **File, Save As**. This deployment file will save which steps have been completed in the Deployment Wizard.

3.2 Opening Deployment Files

To open a deployment file, on the **File** menu, click **Open**. Select the deployment file to open and click **Open**.

3.3 Deployment Wizard

The *DVS* software lets you enter known or “best-guess” values for the various DVS system profiling parameters and shows predictions of expected results. This lets you play “what if?” with the input parameters to evaluate trade-offs you may have to make with regard to standard deviation, profiling range, and timing.

All new configurations start with the wizard. The wizard guides you through questions about the environment, and how you want to setup the DVS unit.

The *DVS* software saves the profiling parameters, predicted consequences, and any notes you make in a deployment file. The file is intended to configure a *DVS* unit for a deployment. It is also a record of the configuration you chose.



NOTE. For more information about *DVS* system commands, see the *DVS* Operation Manual.

The *DVS* software does not send the commands to the *DVS* until you are ready. Consequently, the *DVS* software can be run at your desk without a *DVS* unit connected.

After completing the wizard, you can look at the parameters and/or edit them and see the consequences change. When you are satisfied, you can save the changes to update the deployment file. As you edit settings, the *DVS* software reviews your changes.

3.3.1 Error Messages

If you enter an illegal value, the *DVS* software displays an error message. For example, if you sent a command that specified too large a range to a *DVS* unit, it would reject the illegal command. To prevent this, the *DVS* software displays this error message if you choose a range under 0.03 meters or over 5 meters.

3.3.2 Warnings and Cautions

The *DVS* software also displays warnings and cautions when a parameter is not advisable or is noteworthy. For example, the length of a deployment may be limited by the amount of battery power in the *DVS*. You can enter a longer deployment length, but if you do, the *DVS* software displays this message.

WARNING: Not enough battery power for deployment!

Some messages may not appear until you reopen a deployment file.

WARNING: Selected start date is in the past!



NOTE. You must correct errors before you can continue. You can save a deployment when a warning or caution is present.

3.3.3 Using the Deployment Wizard

To use the deployment wizard, do the following.

- a. Connect and power up the *DVS* system as shown in the *DVS* User's Guide.
- b. Start the *DVS* software.

- c. Start the Deployment Wizard by doing *one* of the following.
- At the **DVS Wizard Startup Options** screen, click **Configure an DVS for a New Deployment**.
 - Click **File, New Deployment** (⚡ on the tool bar).
 - If you are working with a deployment file (*.dvs), on the **File** menu, click **Open**.
- d. The first step is planning. If you want to skip this step, check the **Skip Planning Step** box (see Figure 6), or click **Next** to continue.

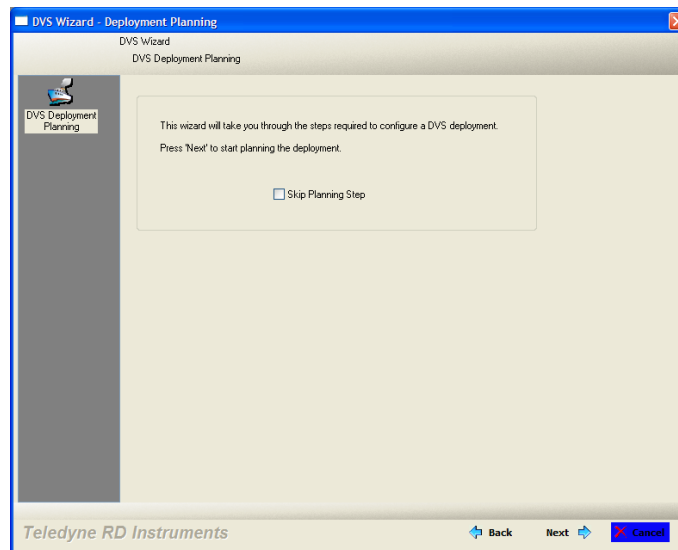


Figure 6. DVS Wizard - Deployment Planning

- e. Select the depth range (1 to 5 meters) you wish to measure (see Figure 7).
- f. Set the resolution (depth cell size) to between 0.03 to 5.0 meters. A larger depth cell (bin) size decreases the standard deviation, but shallow water situations may need to use small depth cells (bins) to get more data points.
- g. Set the range to the 1st cell (blank) to between 0.03 (default) to 5 meters.
- h. The *DVS* software will automatically set the number of depth cells (bins) and show the first and last cell range. Click **Next**.

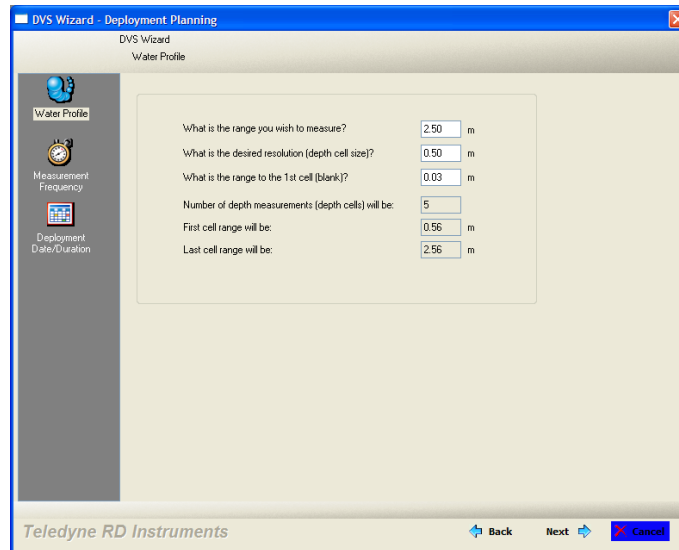


Figure 7. DVS Wizard – Water Profile

- i. Select how many ensembles per hour you want to record (Figure 8). The DVS software will automatically set the time between ensembles. Click **Next**.

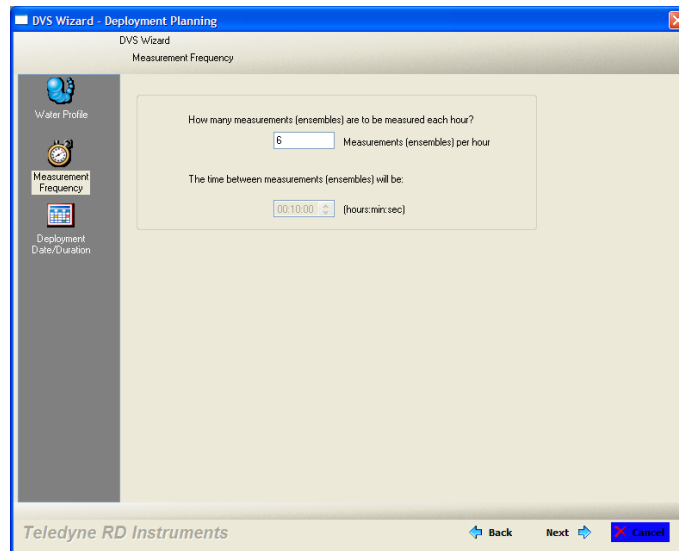


Figure 8. DVS Wizard – Measurement Frequency

- j. Enter the expected duration of the DVS deployment from the time of the first water profiling ping (either immediately or first ping date/time, see Figure 9). This duration *does not* produce a command to instruct the DVS to stop data collection; it is for estimating consequences only. This duration is used to estimate the following *consequences*: Battery Power usage, and Storage required. Click **Next** to continue.

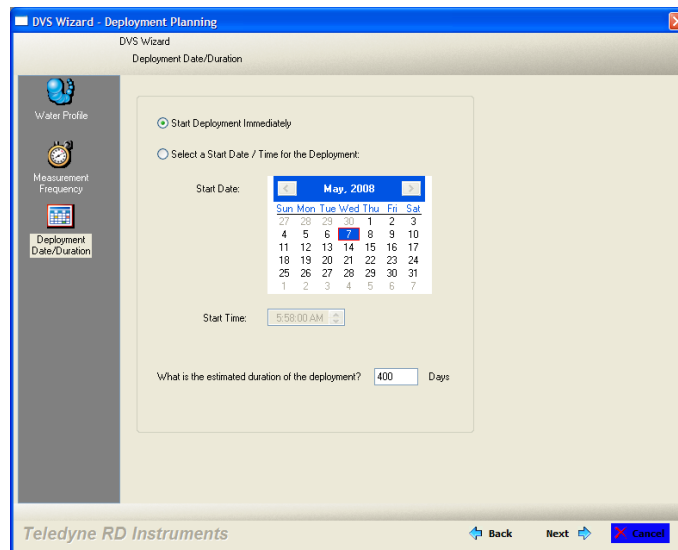


Figure 9. DVS Wizard – Deployment Date/Duration

- k. The **DVS Deployment Settings** screen opens using the settings you selected with the wizard.

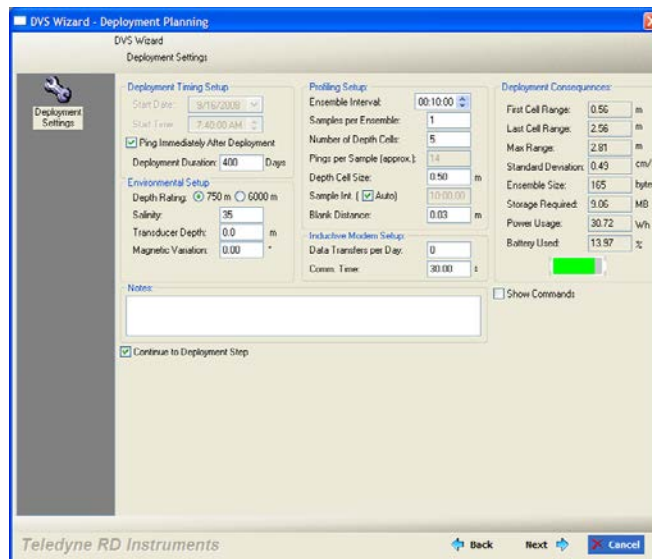


Figure 10. DVS Wizard – Deployment Settings

Deployment Timing Setup

- Start Date/Time - Ping Immediately After Deployment** – Select whether to start the deployment immediately or delayed. Unchecking the box and entering a **Start Date** and **Start Time** in this field enables a delay from the start of a deployment to the first water profiling ping. When enabled, the DVS system will begin collecting velocity data at the date and time specified by the first ping date and time. The DVS will sleep from the time the commands are sent to the DVS until the first ping date and time. Make sure that the time is in the future and that the DVS clock is properly set.

- **Duration** – Enter the expected duration of the DVS deployment. This duration *does not* produce a command to instruct the DVS to stop data collection; it is for estimating consequences only.

Environmental Setup

- **Depth Rating** – Select if the DVS is rated to 750 meters (Standard) or 6000 meters.
- **Salinity** – Fresh water is 0 and salt water is typically 35. Salinity is used to calculate the speed of sound. The speed of sound is used by the DVS unit to scale the velocity data properly.



CAUTION. If you use 0 for salinity when you deployed in water with salinity of 35, then your data will have a 3% velocity estimate error.

- **Transducer Depth** – The DVS uses depth in its speed of sound calculations. If the pressure sensor is not available, then the DVS will use this manual depth setting.
- **Magnetic Variation** – The DVS uses a flux-gate compass that measures magnetic north. You must set the magnetic offset in order to obtain true north referenced velocity data directions.

Profiling Setup

- **Ensemble Interval** – This sets the (minimum) interval over which the DVS will collect and average the samples per ensemble and record data. The format of this field is *hh:mm:ss*, where *hh* = hours, *mm* = minutes, and *ss* = seconds.
- **Samples Per Ensemble** – Adjust the number of samples to get the desired Standard Deviation. To increase the expected accuracy of the velocity measurement (reduce the Standard Deviation), you can increase either samples per ensemble, bin size or both.
- **Number of Depth Cells** – Sets how many depth cells (bins) are used. The **Last Cell Range** field provides the last range that you have setup the system to collect. To increase the **Last Cell Range**, enter more depth cells or increase the depth cell size. A maximum of five depth cells can be used.
- **Pings Per Sample** – displays the calculated Pings per Sample.
- **Depth Cell Size** – Set the depth cell (bin) size.
- **Sample Interval** – Selecting the **Auto** box will evenly space the pings throughout the ensemble, up to the maximum ping interval. If a quick burst of samples is preferred, then the time between samples can be programmed directly by un-checking the **Auto** check box.



NOTE. A “sample” measurement from the DVS consists of as many measurements as can be made during one second; the exact number depends on several parameters, but is on the order of 100. The minimum time between samples is therefore limited to one second.

- **Blank Distance** – Moves the location of the first depth cell away from the transducer head.

Inductive Modem Setup

- The **Inductive Modem Setup** allows evaluation of modem communications on power consumption; it does not configure the actual communications. Enter a **Data Transfers per Day** value to see the **Power Usage** and **Battery Used** consequences. All Inductive Modem communications are initiated from the surface modem, not the DVS.
1. Review the following consequences.
 - **First Cell Range** – The range from the transducer face to the middle of the first depth cell (bin). The depth cell (bin) size and the WF (blank) command in the command file primarily affect where it is located.
 - **Last Cell Range** – The last depth cell range is determined from the number of depth cells (bins), depth cell size, and first depth cell range.
 - **Max Range** – The maximum profiling range is dependent on the DVS frequency, water salinity, water temperature, and the depth of the DVS. A warning message will appear if the maximum range exceeds 6 meters (see [Warnings and Cautions](#)).

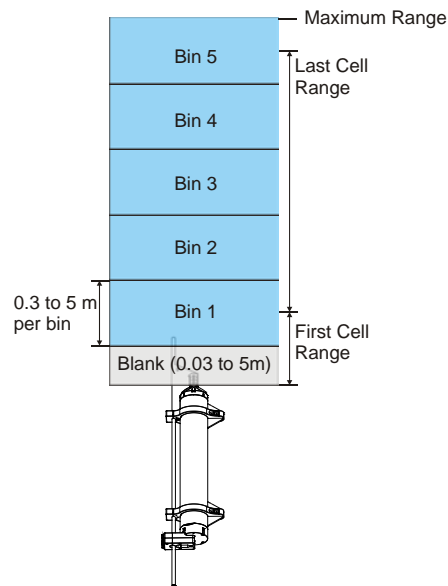


Figure 11. DVS Deployment Consequences

- **Standard Deviation** – Shows the expected standard deviation of the velocity data stored in each ensemble being collected by the DVS. Most users will want to minimize this value so that they obtain the best data possible (i.e. data containing the least amount of noise). Standard deviation is dependent on depth cell (bin) size, the number of pings in an ensemble, the water mode, and the ambiguity velocity.
- **Ensemble Size** – Shows the size in bytes of the each ensemble that is either transmitted or recorded by the DVS.
- **Storage Required** – Shows the amount of storage space required in megabytes (MB) to record the data generated by the DVS over the du-

ration of the deployment. This value should be compared to the free space available on the internal DVS PC card recorder and/or free space on the Computer logging the data transmitted to the serial interface. Free space on the DVS internal recorder can be determined by using the MM command (see [Check the Recorder Status](#)). To convert MB to bytes, multiply the number by 1,048,576 (1024*1024).

- **Power Usage** – The **Power Usage** will reflect how many watt-hours are required.
 - **Battery Used** – The **Battery Used** will reflect what percentage of the battery is used.
- m. Select the **Show Commands** box to view the commands generated by *DVS*. The commands shown in Table 1 explain each command set or added by *DVS*. These commands directly affect the range of the DVS, standard deviation (accuracy) of the data, and battery usage. Table 1 explains the commands used in the sample deployment file for a DVS.

Table 1: Command File Created Using DVS

Command	Choices	Description
CR1	Sets factory defaults	This is the first command sent to the DVS to place it in a “known” state.
CF11100	Flow control	Record binary data internally on the PC card recorder.
TF060712080000	Time of first ping	DVS will begin pinging on July 12, 2006 at 8:00 am.
ES35	Salinity	Salinity of water is set to 35 (saltwater).
ED0	Transducer depth	Manually set depth of the transducer. If a pressure sensor is installed, the ED-command will be used only if the depth sensor fails.
EBO	Heading bias	Magnetic variation.
TE00100000	Time per ensemble	Ensemble interval is set to 10 minutes.
WP1	Number of samples	Number of samples is set to 1
WN5	Number of depth cells	Number of depth cells (bins) is set to 5.
WS50	Depth cell size	Depth cell (bin) size is set to 0.50 meters.
TP100000	Time between samples	The DVS software automatically sets the time between samples to spread the pings evenly throughout the ensemble.
WF03	Blank after transmit	Moves the location of the first depth cell more than 0.03 meters away from the transducer head. The First Cell Rage is displayed under Deployment Consequences.
CK	Keep parameters as user defaults	If power is lost and then restored, all commands will be restored as last sent. Sent right before the CS-command.
CS	Start pinging	Last command sent to begin collecting data.

- n. Move the cursor to the **Notes** section. Use the area to include notes about the deployment.
- o. Any step beyond this point requires communication with a DVS system. If a DVS is not available, you can save this configuration for later use by unchecking the **Continue to deployment** check box and clicking **Next**. Otherwise, you will be prompted to save the deployment file generated here, and will proceed to configuring the DVS for deployment (see [DVS Deployments](#) and Figure 13).
- p. Name the deployment file and click **Save** to save the deployment file (see [Saving Deployment Files](#)). The *DVS* software will automatically add the extension *.dvs to the file.

3.4 DVS Deployments

- a. Connect the DVS unit to a computer running the *DVS* software via either the RS232 communications or the inductive modem.
- b. A command file must be loaded into the *DVS* software, either having been generated in the planning module (see [Using the Deployment Wizard](#)), or loaded directly from the **File, Open** menu. In either case, the *DVS* software display should be at the **Deployment Settings** screen as shown in Figure 10.
- c. Check the **Continue to deployment** checkbox and click **Next** to reach the **DVS Deployment** screen shown in Figure 12.

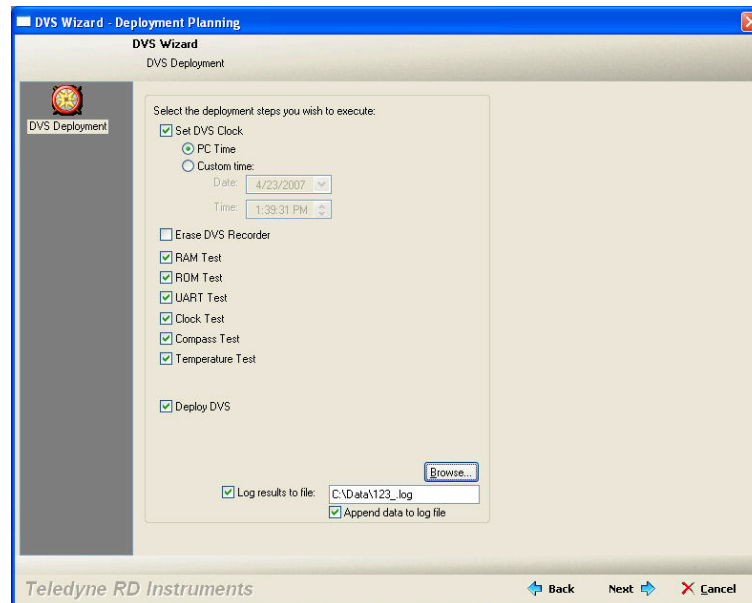


Figure 12. DVS Deployment Screen

This screen contains the most commonly used “last minute” items done just prior to physically deploying the DVS unit. These include: **Set DVS Clock** (usually to the time on the connected PC); **Erase DVS Recorder** (not selected by default to avoid inadvertent loss of data); selecting the diagnostic tests to be run, and **Deploy DVS** (which uploads the selected command file to the DVS unit).

- d. Select the **Log results to file:** check box and select a file name using the **Browse** button. This will save the communications to the DVS to a text file.
- e. Once all of the desired options are checked, click the **Next** button.

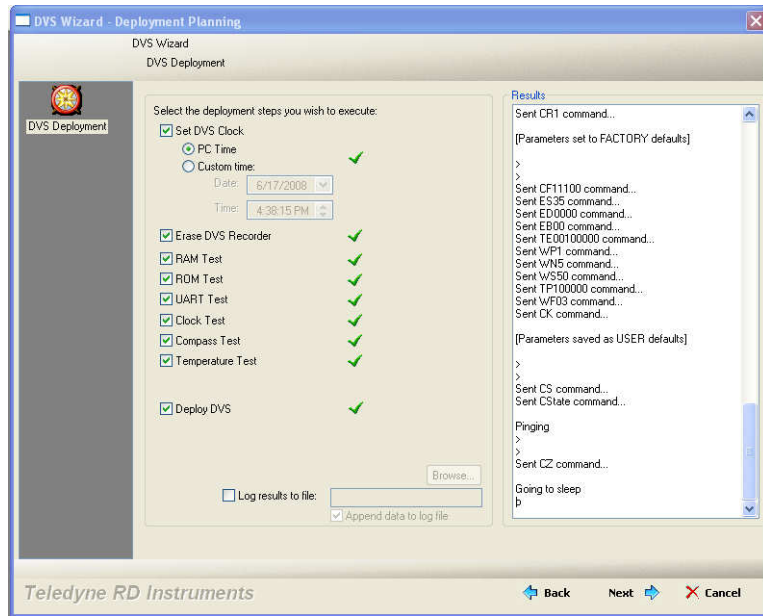


Figure 13. DVS Wizard – Deployment

- f. A **Results** box will open and display the communications to the DVS in real time as the steps are run. A green check mark next to each step indicates there were no problems; a red **X** indicates a problem or that the step was skipped.

Once the commands have been sent to the DVS, proceed as follows.

- Disconnect the test I/O cable and use the DVS User's Guide to verify the DVS unit is sealed and ready for deployment.
- Deploy the DVS.

4 DVS Terminal

Use the DVS terminal screen to send any command to the DVS unit. The commands are listed on the left hand side of the window. Selecting any of the commands will display a definition of its use on the right-hand side, with options to choose depending on the command.

- a. Setup communications with the DVS.
- b. On the **Tools** menu, click **Terminal**.
- c. Click **Send Break** to wakeup the DVS unit. For every break sent, you should see the wakeup message.
- d. Select the name of the command and parameters to be run. Click the **Send** button.

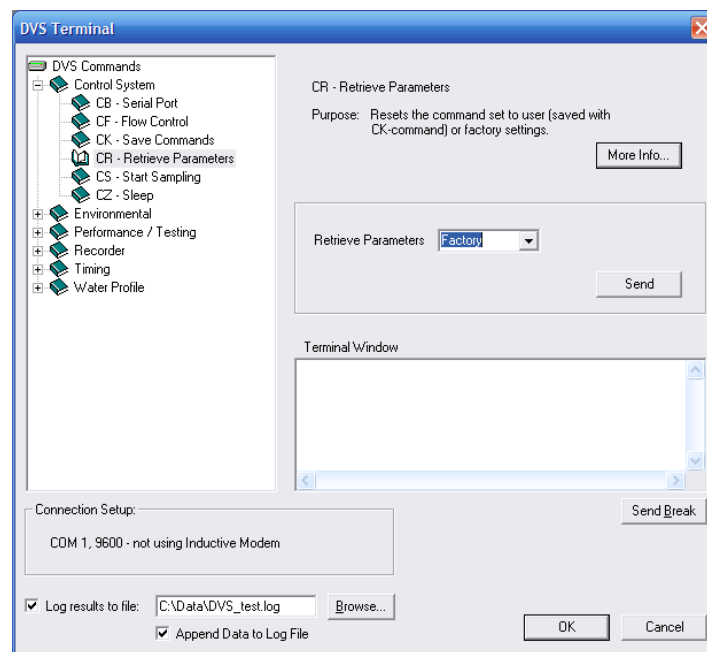


Figure 14. DVS Terminal Screen

5 Test the DVS

Use the following steps to test the DVS.

- a. Connect and power up the DVS unit as shown in the DVS User's Guide.
- b. Start the *DVS* program.
- c. At the **DVS Wizard Startup Options** screen, click **Test a DVS**. Click **Next**.
- d. On the **Test DVS** screen, select **Run All Tests** (includes the recorder test) or **Run Individual Tests** and select the desired tests. Click the **Start Test** button. The selected tests will run (see the DVS Operation Manual for details on the test printouts). A green check mark next to the test name indicates the test passed. If a selected test fails, a red X will be placed next to the test name and a dialog box will prompt if you want to continue testing.
- e. The results of the test will be displayed in the **Terminal Window** area and saved to the log file (*.log) if the **Log result to file** box is selected.
- f. Click **OK** to exit the **Test DVS** screen.

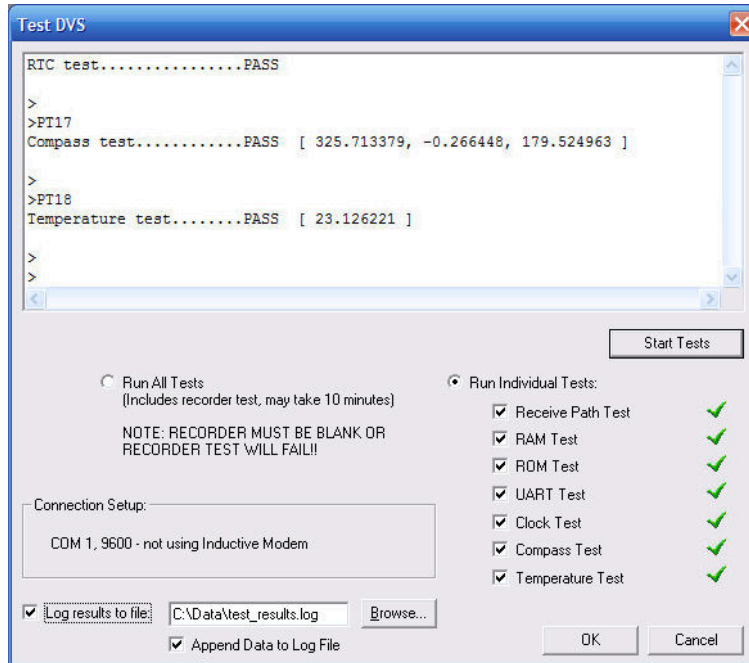


Figure 15. Testing the DVS

6 Recorder Functions

The *DVS* software has the capability to recover and convert data, check the status, and erase the recorder.

6.1 Recover Data

Once you have recovered the DVS, you should refer to the Maintenance section of the Operation Manual for instructions on cleaning the DVS unit exterior. Use the *DVS* software to recover the data once the DVS is clean and dry. The *DVS* software reads the data from the DVS's internal recorder and transfers the data to the computer's hard disk. Select a directory name on the computer's hard drive where the data will be written.



NOTE. It is highly recommended to use the test I/O cable and increase the baud rate to 115200 BAUD to reduce the download time. Use external power to save battery power.

- a. Connect and power up the DVS unit as shown in the DVS User's Guide.
- b. Start the *DVS* software.
- c. At the **DVS Wizard Startup Options** screen select **Recover Data from an DVS's Recorder** or from the **Tools** menu, select **Recover Recorder Data**.
- d. Browse to an appropriate directory for the download.
- e. Select what **Data to Download**. The options are to download averages of previous data collected, the last ensemble, command a new sample, or the entire data set.
- f. Select the data format. The raw data format is a compressed file format created to minimize the memory requirements for the DVS unit and better accommodate long deployments. The raw data stored can be converted to TRDI standard PDO format on extraction, which can then be read by TRDI standard software tools such as *WinADCP* (see [Convert Data](#)).
- g. Click the **Download...** button to begin downloading data.

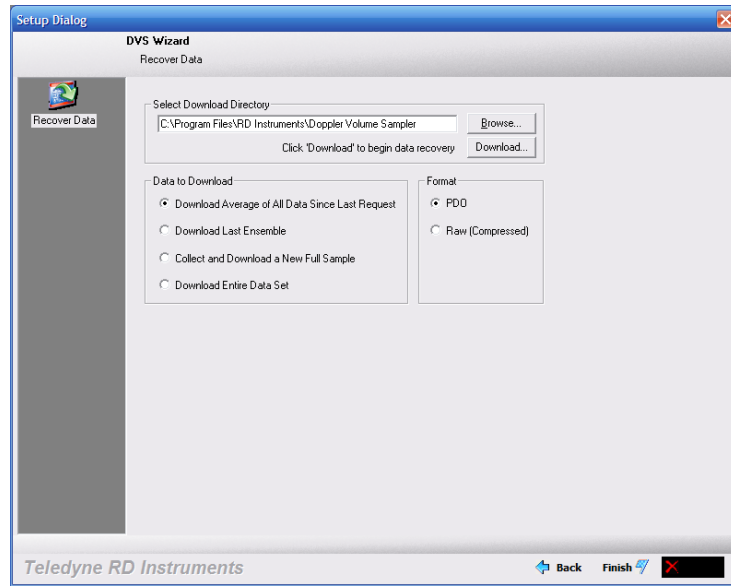


Figure 16. Recover Data Screen

6.2 Convert Data

The PD20 raw data format is a compressed file format that is not readable by *WinADCP*. To convert the PD20 data to TRDI standard PDO format, do the following.

- a. Recover the raw PD20 (compressed data) from the DVS recorder (see [Recover Data](#)).
- b. On the **Tools** menu, select **Convert PD20 to PDO**.
- c. Use the **Browse** button to locate the PD20 file to convert.
- d. Click **Browse** to select a folder and file name for the PDO file. Click **Save**.
- e. Click the **Convert File** button to begin the conversion.

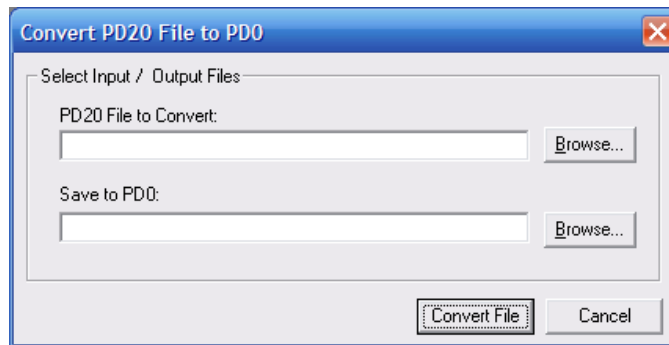


Figure 17. Convert PD20 File to PDO

6.3 Check the Recorder Status

Use the **Check Recorder Status** functions to see how much memory is used on the recorder.

- a. Connect and power up the DVS unit as shown in the DVS User's Guide.
- b. Start the *DVS* software.
- c. On the **Tools** menu, click **Recorder Status**. This will open **Recorder Status** screen (see Figure 18).
- d. Click the **Get Status** button.
- e. The results of the test will be displayed in the **Recorder Status** area and saved to the log file (*.log) if the **Log result to file** box is selected.
- f. Click **OK** to exit the **Recorder Status** screen.

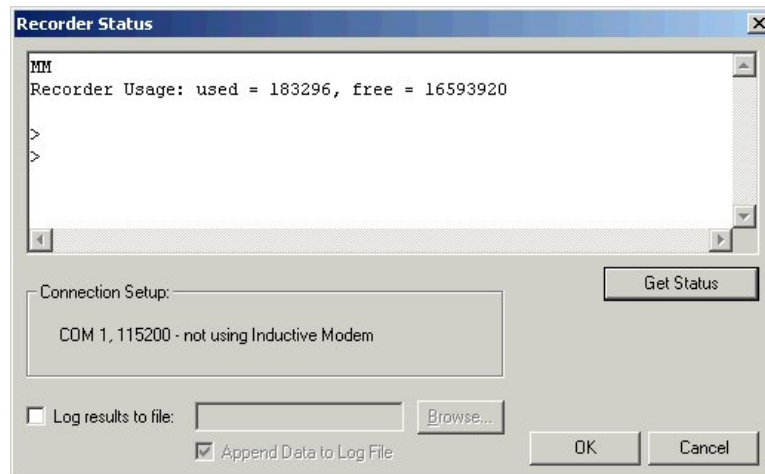


Figure 18. Recorder Status


6.4 Erase the Recorder

Once all data has been recovered, the recorder can be erased. *Once erased, the data is not recoverable.*

- a. Connect and power up the DVS unit as shown in the DVS User's Guide.
- b. Start the *DVS* software.
- c. Recover the data (see [Recover Data](#)). Once erased, the data is not recoverable.
- d. On the **Tools** menu, click **Erase Recorder Data**.
- e. Type **ErAsE** (you must use the exact upper and lower case characters).
- f. Click **OK**.



Figure 19. Erase the Recorder

 **CAUTION.** Data is not recoverable after erasing.

7 Compass Alignment

Compass calibration is an automated built-in test that measures how well the compass is calibrated. The procedure measures compass parameters over 16 samples. When it has collected data for all required directions, the DVS unit computes and displays the results.

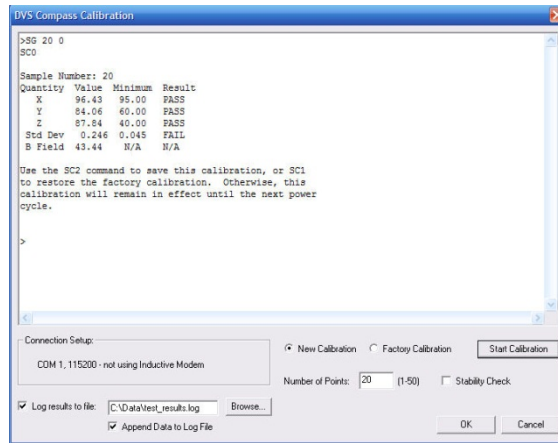



Figure 20. DVS Compass Calibration

 **NOTE.** For step-by-step instructions on the compass calibration procedure, see the DVS Operation Manual.

8 DVS Software History

Version 1.05

- Adjusted power model to reflect actual usage (battery capacity reduced by 20% (180 Watt Hours versus 220 Watt Hours), and overall power consumption increased by 30%)
- Fixed a Calendar control bug on Windows 7

Version 1.04

- Updated a warning about DVS not sleeping if $TP \leq 3.0s$
- Made it easier to enter custom sample intervals such as 00:02.00
- Added 'approx' to the calculation of pings per ensemble

Version 1.03 (internal TRDI release only)

- Fixed problem with installation on foreign machines.
- Added ability to set IMM communication time used in the power consumption calculation.
- Added display for calculated 'Pings per Sample.
- Changed warning font.
- Added ability to send PC2 and PC4 commands over IMM.
- Fixed problem with allowing disabled IMM commands when in lower case.
- Added depth rating setting to DVS setup.

Version 1.02

- Fixed problem with TF format generated in the wizard

Version 1.01 - Initial Release.

NOTES