



DASTM DATA

ACQUISITION SUITE
for MICROTRAP +TM

Operations Manual

Edition 1.0



MREL GROUP OF COMPANIES LIMITED

5-779 Sir John A MacDonald Blvd. Kingston, Ontario K7L 1H3 Canada

T: +1-613-545-0466

E: contact@mrel.com

www.mrel.com

Copyright Information

MREL Group of Companies Limited (MREL) warrants that the product is free from Manufacturer's defects for a period of one (1) year from the date of shipment to the Customer. This Warranty covers all parts and labour.

MREL does not warrant that the product will meet the Customer's requirements, or that it will operate in the combinations which may be selected by the Customer.

MREL does not and cannot warrant the performance or results that may be obtained by using the product. Accordingly, the product and its documentation are sold "as is" without warranty as to their performance, merchantability or fitness for any particular purpose. The Customer assumes the entire risk as to the results and performance of the product.

MREL is committed to product innovation; accordingly product may undergo specification improvements without notice. Copyright © 2025 MREL Group of Companies Limited. DAS™ Data Acquisition Suite for MicroTrap +™, DAS™ Data Acquisition Suite for MicroTrap +™ Logo, MicroTrap +™ VOD Recorder, MicroTrap +™ VOD Recorder Logo and MREL Logo are trademarks or registered trademarks of MREL Group of Companies Limited.

© Copyright 2025 MREL Group of Companies Limited. This Operations Manual supersedes any earlier editions. All Rights Reserved. Reproduction or adaptation of any part of this documentation or Software without written permission of the Copyright owner is unlawful.

Publication History

Edition 1.0, December 2025

This version of the Manual

Table of Contents

Chapter 1: Introduction	1
1.1 Introduction	2
Chapter 2: Installation	3
2.1 System Requirements	4
2.2 Recommended System Requirements	4
2.3 Prerequisites Installation Process	4
2.3.1 .NET Framework 4.0 Installation Process (if required)	5
2.4 Installation Process	7
2.4.1 Installation Process for Windows Vista® and Higher	7
2.5 Uninstallation of DAS™ Data Acquisition Suite for MicroTrap +™	11
2.5.1 Uninstallation Process	11
Chapter 3: Starting the DAS™ Data Acquisition Suite for MicroTrap +™	13
3.1 Starting the DAS™ Data Acquisition Suite for MicroTrap +™	14
Chapter 4: Programming the MicroTrap + VOD Recorder	15
4.1 Programming the MicroTrap +™ VOD Recorder	16
4.1.1 VOD Setup in the MicroTrap +™ VOD Recorder	16
4.1.2 Advanced Setup	17
4.1.3 Delete All Tests	18
Chapter 5: Downloading from the MicroTrap +™ VOD Recorder	19
5.1 Downloading from the MicroTrap +™ VOD Recorder	20
Chapter 6: Opening a Data File	23
6.1 Selecting a Data File	24
6.2 Calendar	24
6.3 Browse	25
6.4 Recently Opened Files	25
6.5 Recently Downloaded Files	26
6.6 Working With the Data File	26
6.7 Closing a Data File	26

Chapter 7: Data Analysis**27**

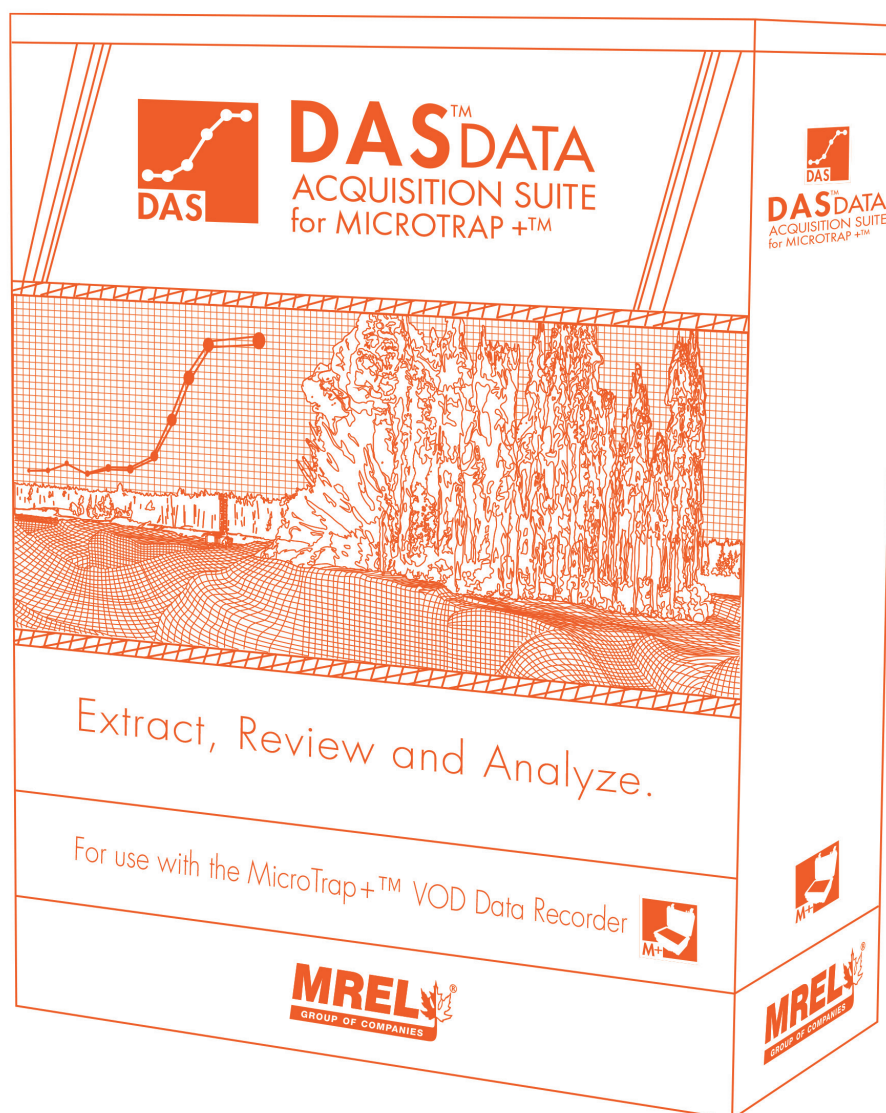
7.1	Home Tab	29
7.2	View Tab	30
7.3	VOD Tab	33
7.3.1	How to measure VOD	33
7.4	2-Point Functions Tab	34
7.5	Help Tab	35
7.6	VOD Analysis	36
7.7	Exporting Graph	37
7.7.1	Export Graph Data	37
7.7.1	Export Graph Image	37
7.8	User Preferences	37

Chapter 8: Contacting MREL for Technical Support**39**

8.1	Contacting MREL	40
8.2	Emailing Data Files to MREL	40
8.2.1	MicroTrap +™ VOD Recorder	40

Chapter 1

Introduction



1.1 Introduction

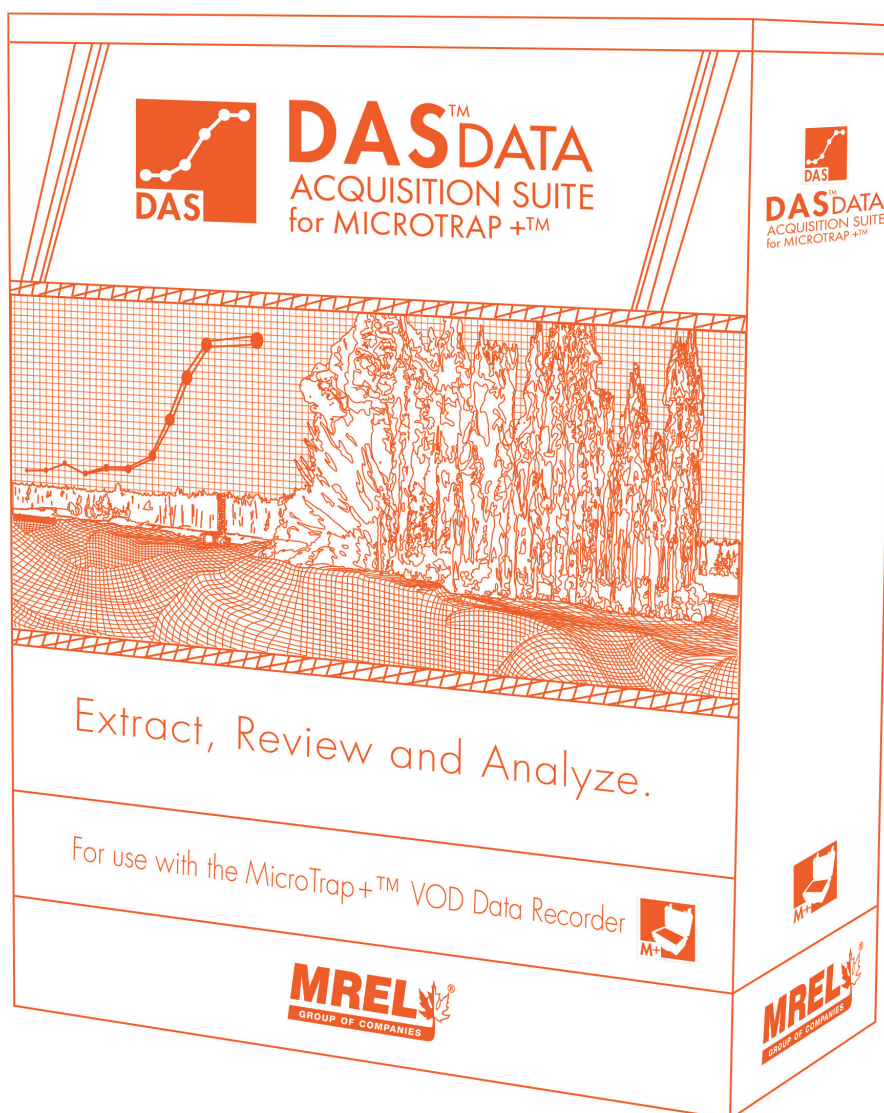
MREL's DAS™ Data Acquisition Suite for MicroTrap +™ has been designed to be utilized with **MicroTrap +™ VOD recorder**. This software suite will allow the user to program (where applicable), download and analyze the data from the recorder. The **DAS™ Data Acquisition Suite for MicroTrap +™** will allow the user to manage all of the files downloaded from **MREL VOD/Data recorders** using a single software.

This edition will allow the user to open data files from any of the the **MicroTrap +™ VOD Recorder**. The user can perform all of the standard features that the users have been accustomed to. For a **VOD** channel, the measurements that a user can do are as follows:

- Measure Velocity of Detonation
- Borehole or Sample
- Measure Column Height
- Measure Booster Location
- Measure Time Delay Between Holes
- Measure Effectiveness of Decking

Chapter 2

Installation



Overview

This section will step the user through the installation procedure on their computer.

2.1 System Requirements

The minimum system requirements for **DAS™ Data Acquisition Suite for MicroTrap +™** are as follows:

- 64-bit CPU: AMD/Intel
- Memory: 2 GB
- Hard disk space: 1 GB, more space is required for large number of files.
- Ports: USB port (internal or powered)
- Monitor resolution: 1200 x 800
- Operating system: Windows 10 or later
- Full .NET 4 framework

Administrative type of user account and Internet connection required for registration, upgrades, updates and support. The software can be used offline when not performing any of the previous tasks.

2.2 Recommended System Requirements

The recommended system requirements for **DAS™ Data Acquisition Suite for MicroTrap +™** are as follows:

- 64-bit CPU: AMD/Intel
- Memory: 8 GB or more
- Hard disk space: 25 GB or more
- Ports: USB 2.0 or 3.0 port (internal or powered)
- Monitor resolution: 1200 x 800 or more
- Operating system: Windows 10 or above (64-bit)
- Any suitable mail client program such as Microsoft Outlook, Mozilla Thunderbird etc.
- Full .NET 4.5 or above framework
- Administrative type of user account and Internet connection required for registration, upgrades, updates and support. The software can be used offline when not performing any of the previous tasks.

2.3 Prerequisites Installation Process

The **DAS™ Data Acquisition Suite for MicroTrap +™** setup will display a message if necessary prerequisites from internet are needed to be installed first. It will direct user to the correct download page if computer is connected to the internet. If not connected, it will show the error page in the computer's default web browser.

2.3.1 .NET Framework 4.0 Installation Process (if required)

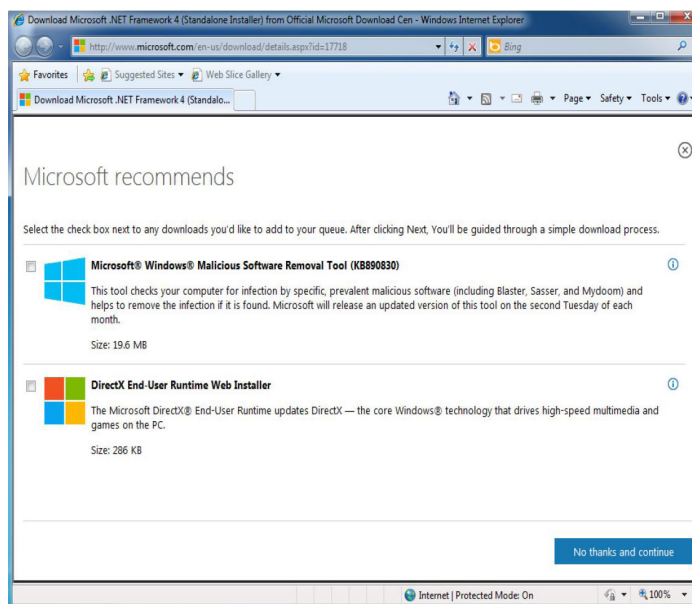
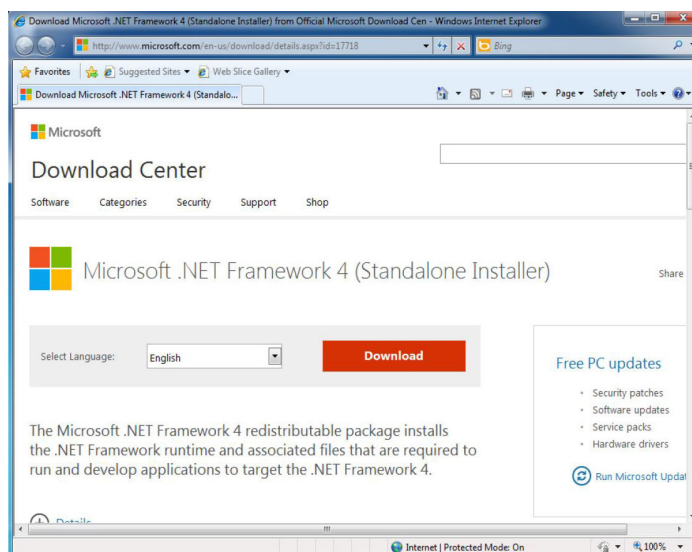
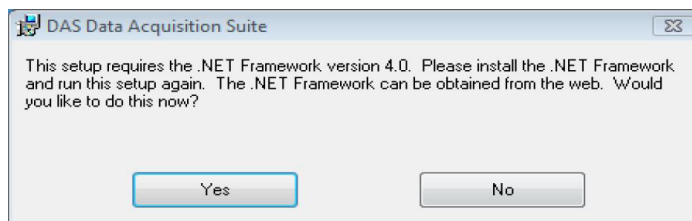
Double click on the **DAS™ Data Acquisition Suite for MicroTrap +™** install package (.msi) file or **Right-Click** on the file and choose install. **You need to be using administrative type of user account on the computer to perform the installation.**

If setup program has detected that the .NET Framework 4.0 is not installed, it will show the message as shown on the right.

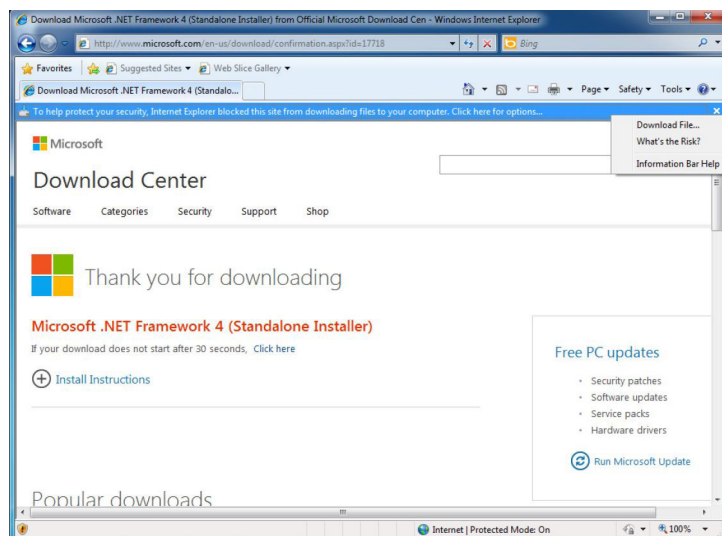
If the computer is connected to the internet and user chooses **Yes** in above dialog, the default web browser is opened showing the **.NET Framework 4.0** Full package download page.

Click the **Download** button to download **.NET Framework 4.0** setup.

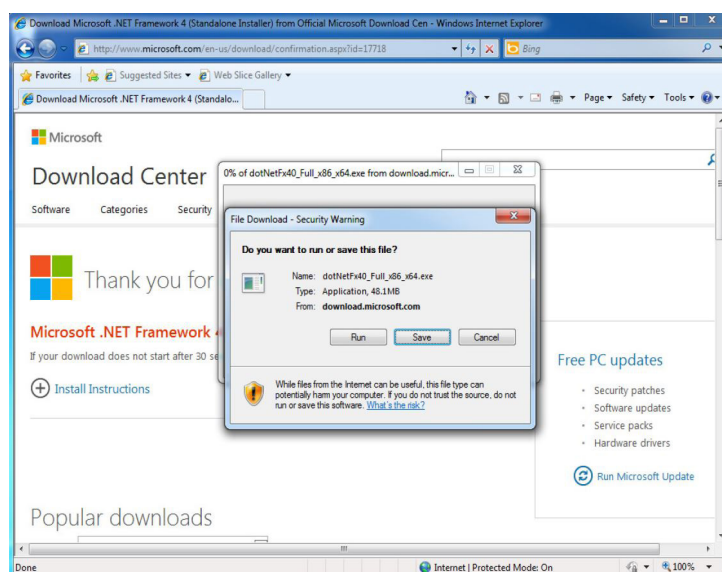
The optional components suggested by the page can be ignored by clicking **No thanks and continue** button as shown to the right.



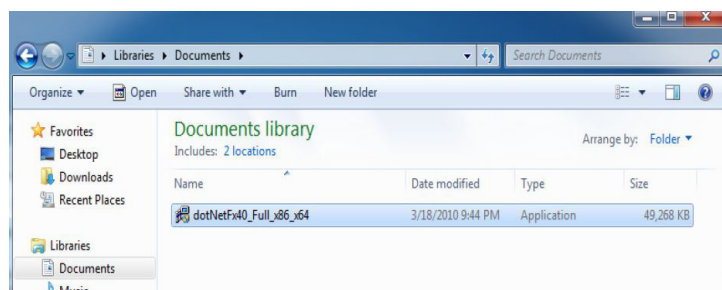
Click the blocked pop-up tool-bar (if pop-up is blocked by browser) and select **Download File...** option as shown to the right.



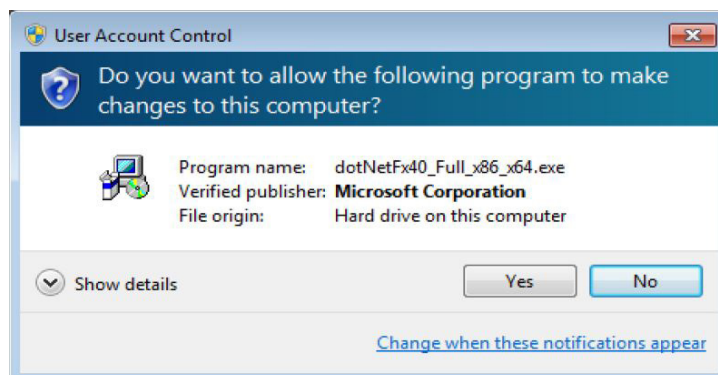
Save the file in a desired temporary location as shown to the right.



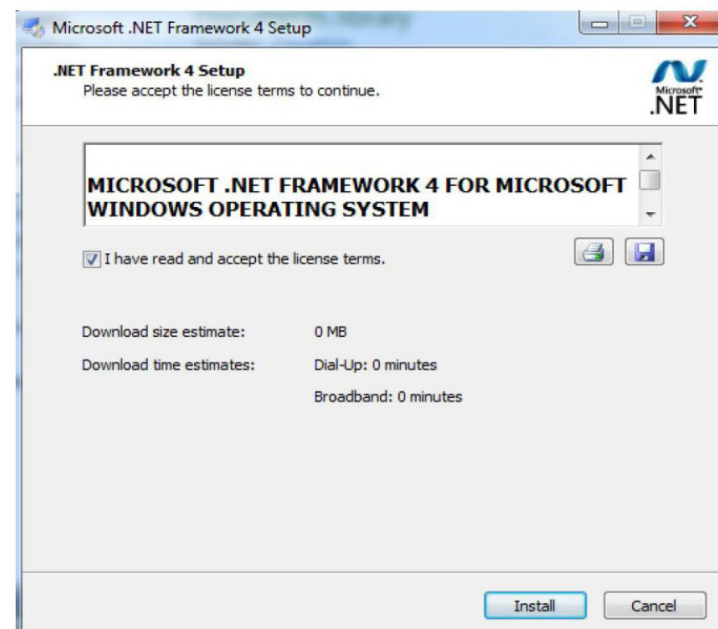
Double click the downloaded file (.exe file) to install **.NET Framework 4.0** shown to the right.



Click the **Yes** button in UAC "User Account Control" dialog shown to the right.



The package will uncompress and shows the initial **Microsoft .NET Framework 4 license Agreement** dialog. Check **Accept** check box and click **Install** button as shown to the right.



When Installation finishes with success, you can proceed to run the installation package for **DAS™ Data Acquisition Suite for MicroTrap +™** as described in the following section.

2.4 Installation Process

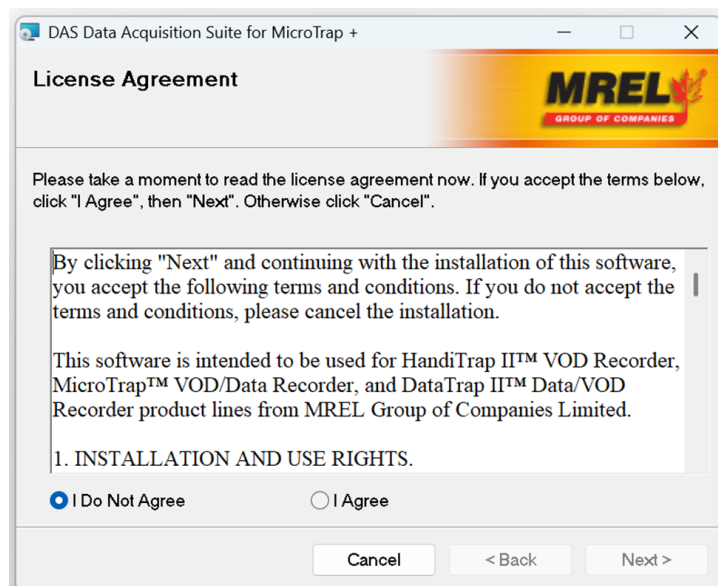
The installation package can be obtained at <http://www.mrel.com/das> and locally save it if you have either not received copy or have misplaced it.

2.4.1 Installation Process for Windows 7® and Higher

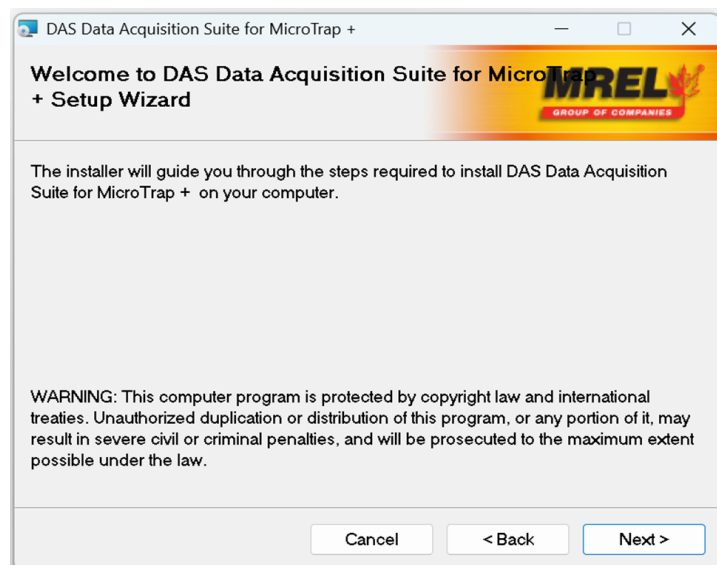
IMPORTANT

MREL recommends exiting all programs before starting installation.

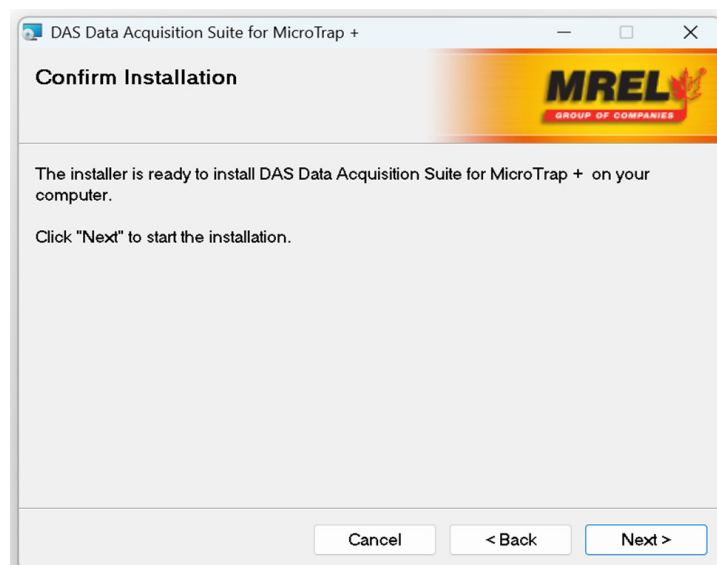
Double click on the **DAS™ Data Acquisition Suite for MicroTrap +™** setup package (.msi) or **Right-Click** on the file and choose install. You need to be using an administrative type of account on the computer to perform the installation. The installation dialog will appear with License Agreement as shown to the right.



Click **I Agree** and click on **Next**. This will display the image to the right.

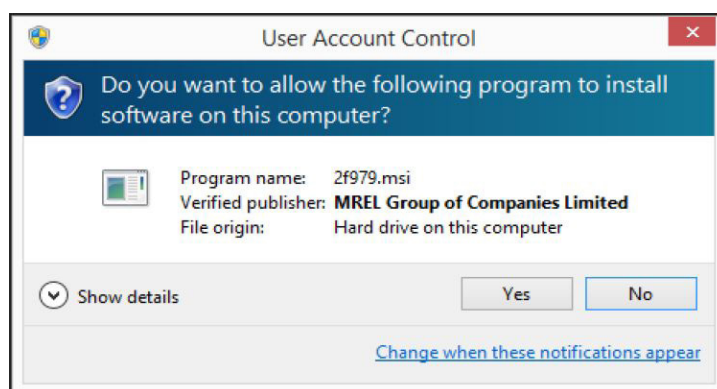


Click the **Next** button to confirm the installation process to begin. This will result in the following screen.



Click the **Next** button which results in the following **User Account Control (UAC)** dialog for Windows 7® or above.

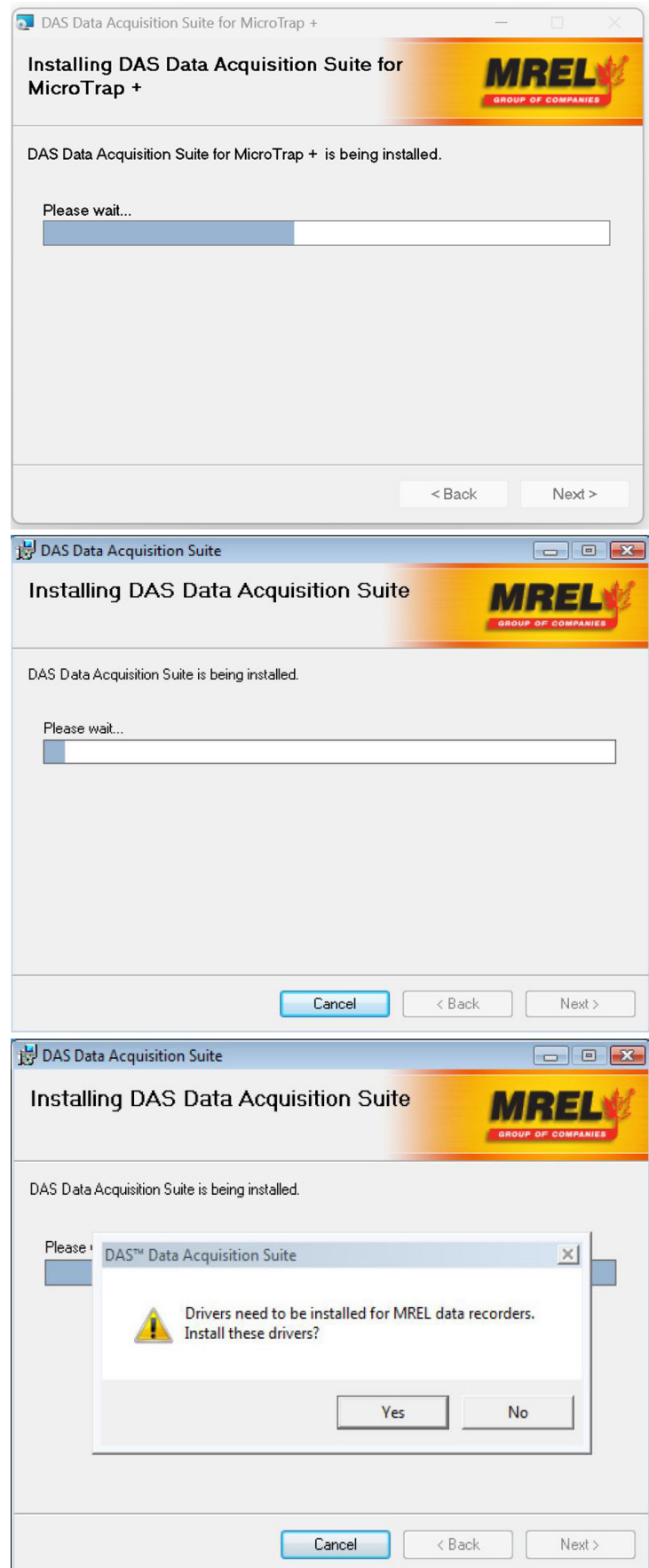
Click **YES** to proceed.



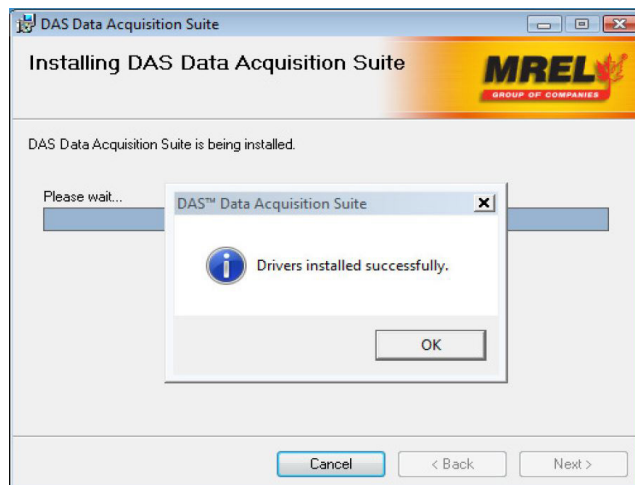
In **Windows 7®**, the User Account Control (UAC) dialog may look like the image shown to the right. Click **Allow** to proceed

Installation process will begin and the image to the right will be shown.

Click the **YES** button to install the needed drivers.



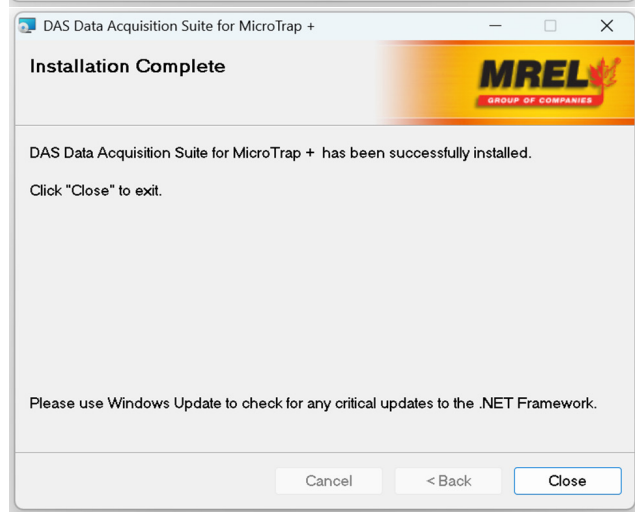
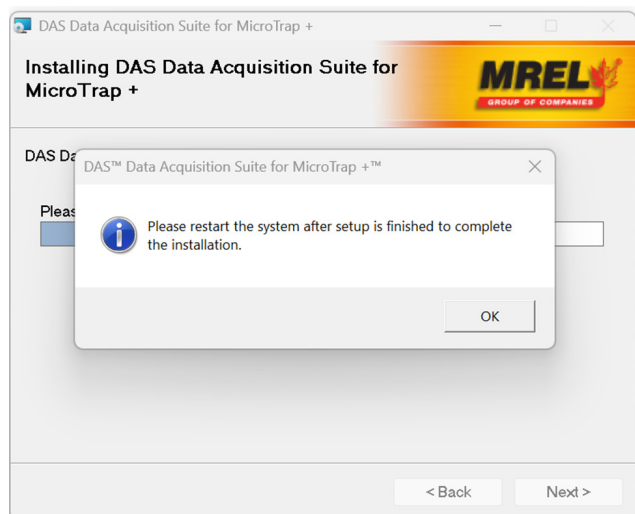
Click **OK** to the following message box which shows the drivers installation was successful. Click **Close** to complete the installation.



Click **Yes** to restart the system to complete the installation (this is recommended) in the image shown right.

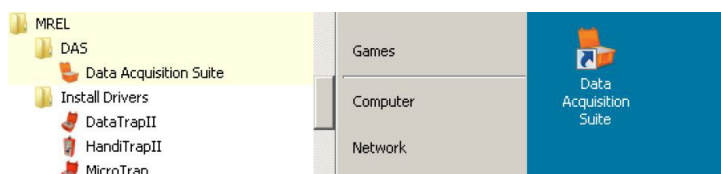
System will restart to complete the installation.

If you clicked **No** so as not to restart the system, click **Close** to complete the installation.



The **DAS™ Data Acquisition Suite for MicroTrap +™** has been successfully installed.

A program group **MREL** with the folder **DAS™** will be created in Start > All Programs menu. Also a shortcut named **DAS™ Data Acquisition Suite for MicroTrap +™** is created on the desktop as show to the right.



2.5 Uninstallation of DAS™ Data Acquisition Suite for MicroTrap +™

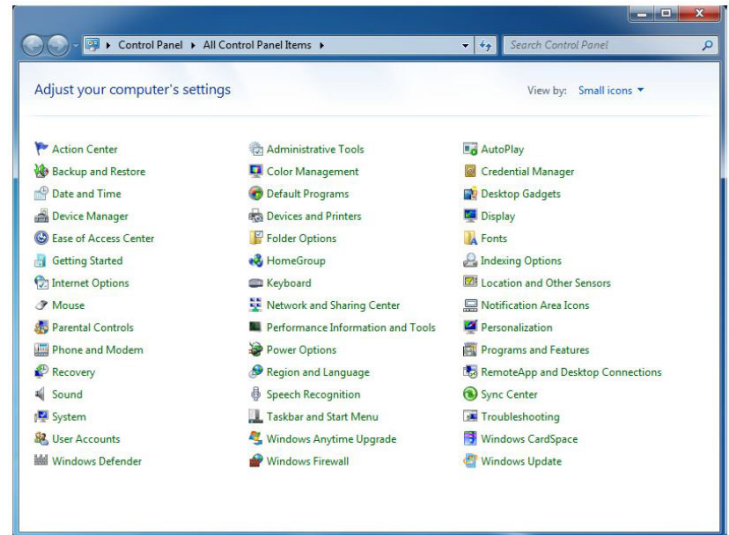
IMPORTANT

To uninstall the software, you need to use an administrative type of user account on the computer.

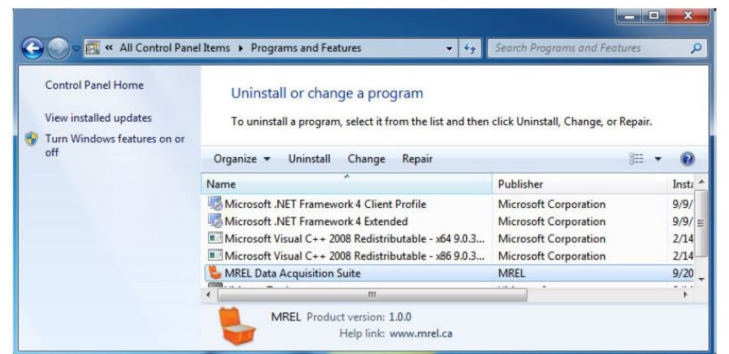
2.5.1 Uninstallation Process

Uninstalling **DAS™ Data Acquisition Suite for MicroTrap +™** on supported version of **Windows®** Operating Systems is similar.

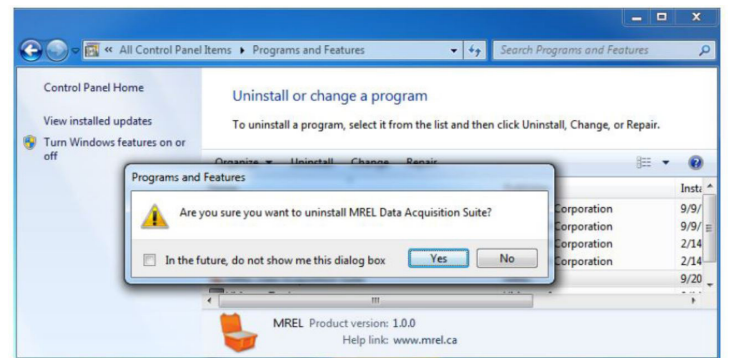
To uninstall **DAS™ Data Acquisition Suite for MicroTrap +™**, click **Control Panel** panel in **Start**. The control panel is displayed as follows.



Click **Programs and Feature** icon in **Control Panel** which displays a screen shown as to the right.



Select **MREL Data Acquisition Suite** in the list and Double-Click it. This shows the image on the right.



Click **Yes** button to the dialog asking **Are you sure you want to uninstall MREL Data Acquisition Suite?** which shows the **Preparing to remove** status dialog.

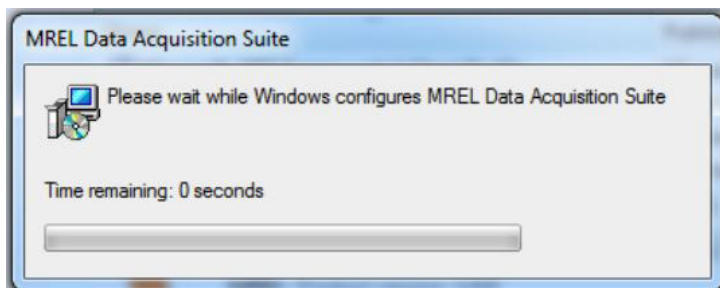
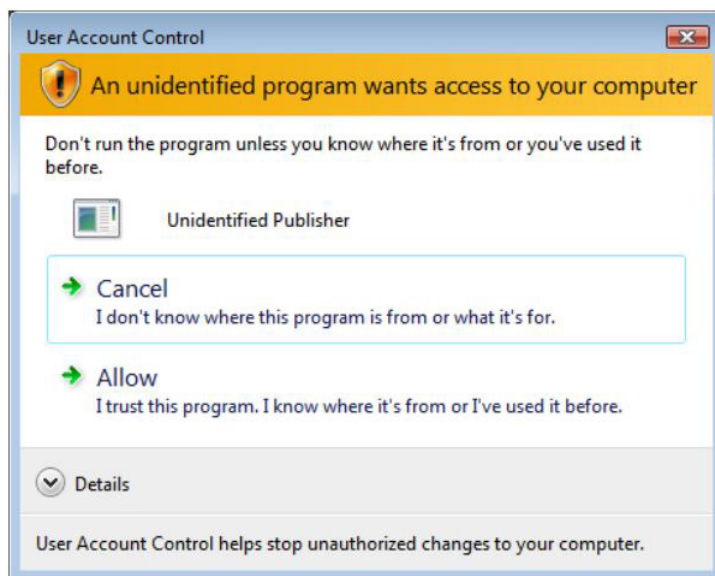
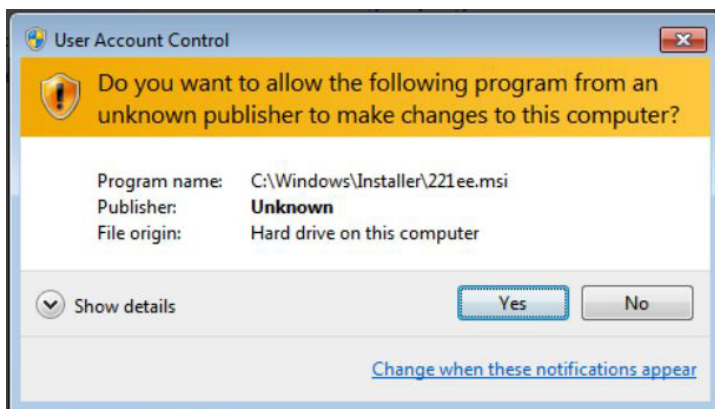
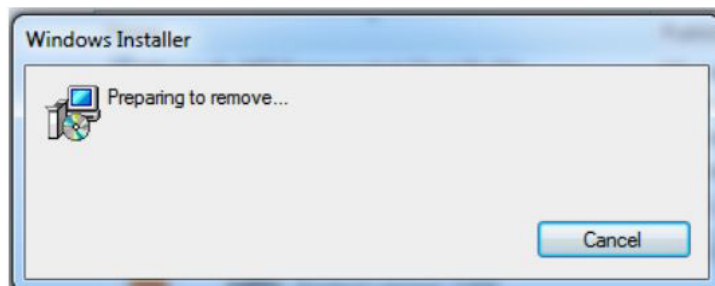
Click **Yes** button in **UAC (User Account Control)** dialog as shown to the right.

In **Windows Vista®**, the **UAC** dialog box will look like the image shown to the right. Click **Allow** to proceed

Uninstall will show a progress dialog box similar to the image to the right.

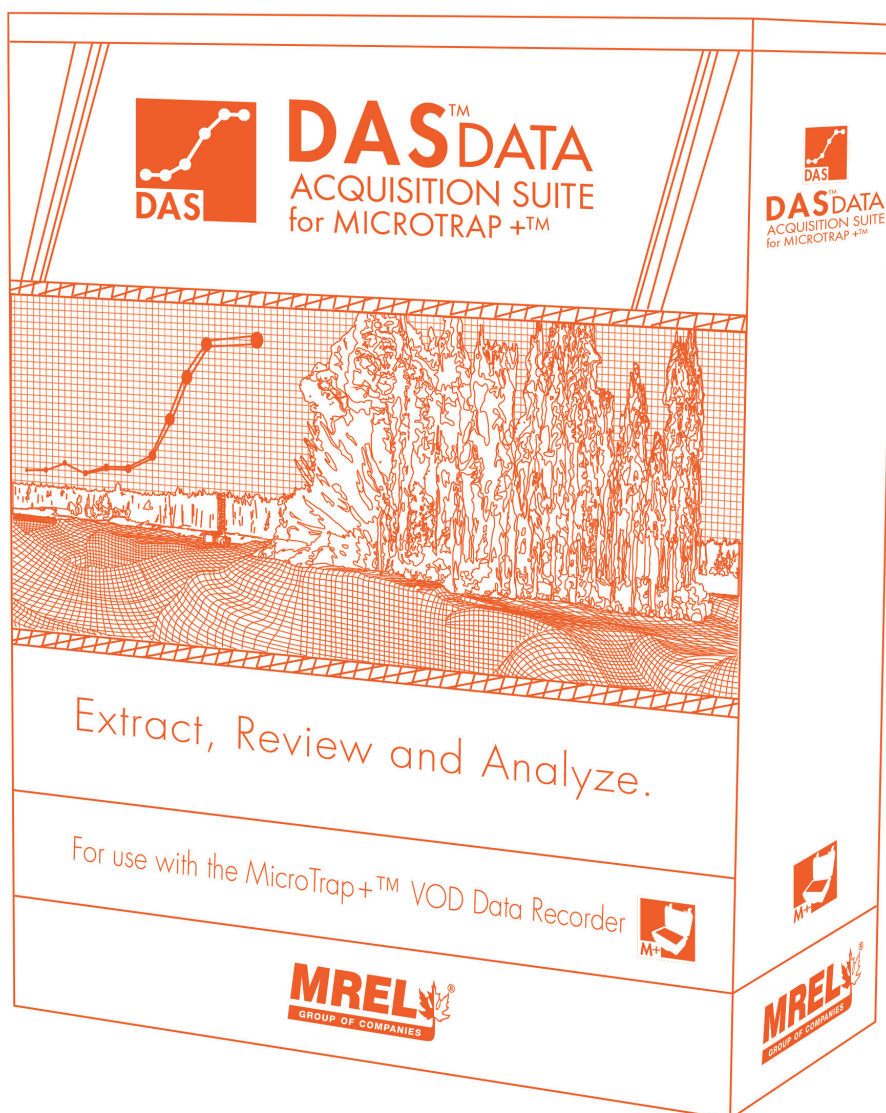
Once the progress dialog box completes, the **DAS™ Data Acquisition Suite for MicroTrap +™** will be successfully uninstalled. However, your data and related settings will still be present.

You can now close **Programs and Features** dialog and the **Control Panel** itself.



Chapter 3

Starting the DAS™ Data Acquisition Suite for MicroTrap +™



Overview

This Chapter describes the starting process for the DAS™ Data Acquisition Suite for MicroTrap +™.

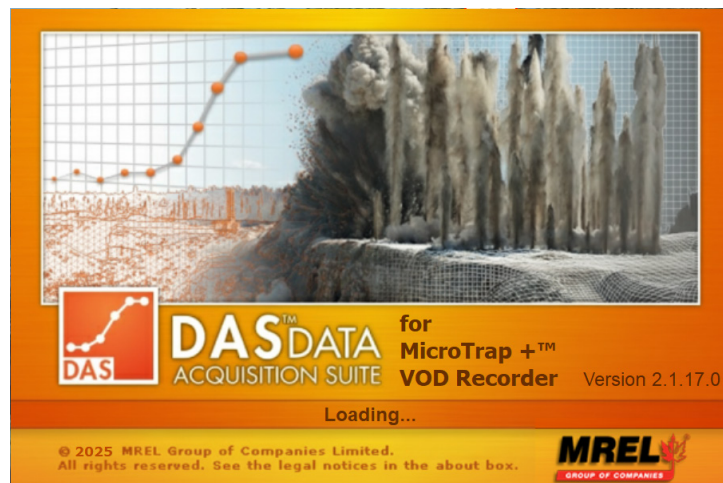
3.1 Starting the DAS™ Data Acquisition Suite for MicroTrap +™

Double click on the **DAS™ Data Acquisition Suite for MicroTrap +™** desktop icon.

Alternatively access the program through the **Start Menu**.

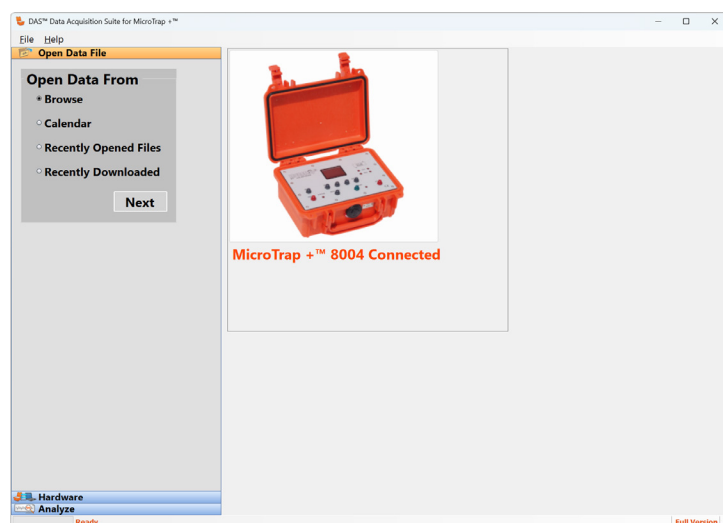
Start > All Programs > MREL > DAS > DAS™ Data Acquisition Suite for MicroTrap +™.

The following splash screen will show up.



When **DAS™ Data Acquisition Suite for MicroTrap +™** completes loading, the splash screen fades away to show the main screen as shown to the right.

After the initial screen is displayed, the **DAS™ Data Acquisition Suite for MicroTrap +™** may check and update the main display for any connected **MREL** Data or VOD recorders and any tests stored if any.



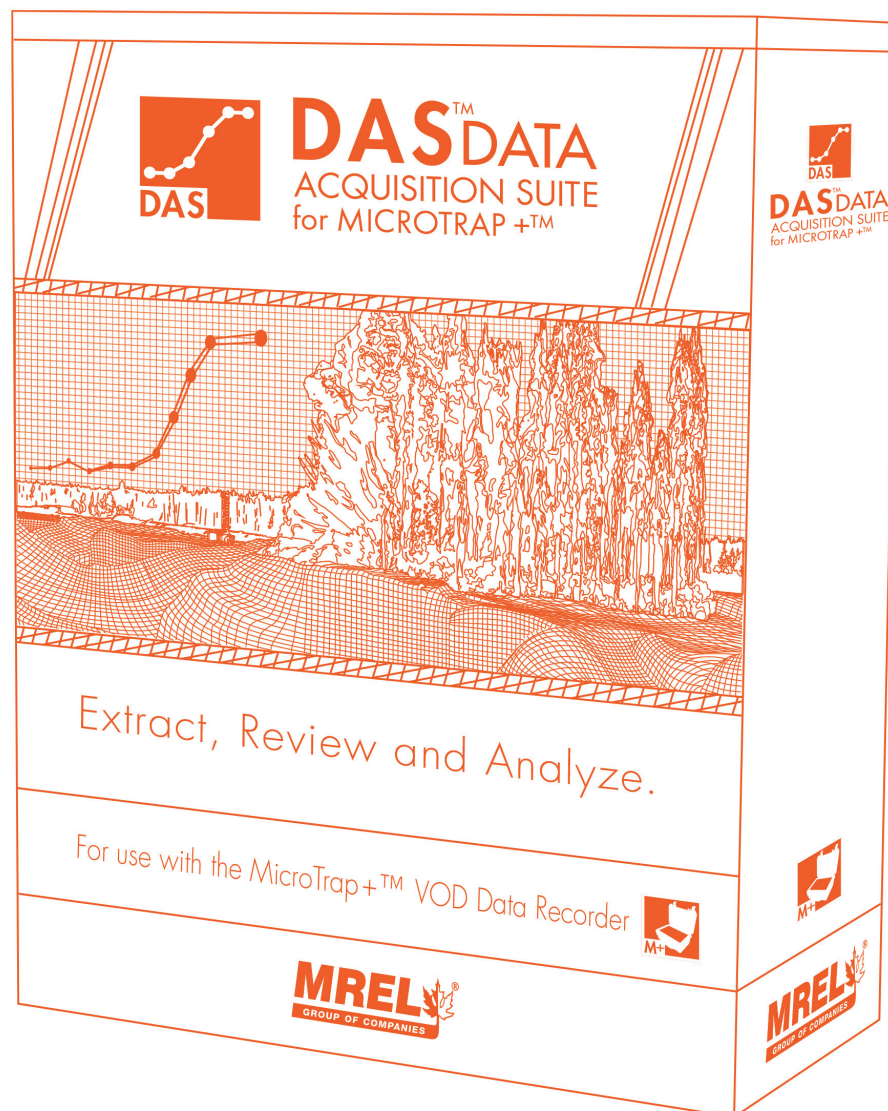
Note: The message box to the right is displayed for a short period of time upon starting the software. The software is checking for any hardware attached to the computer. The software periodically checks for any changes in connected status of the recorders.

Connected Recorder Devices Status

It may take upto one minute to recognize the connected/disconnected recorders/cables

Chapter 4

Programming the MicroTrap + VOD Recorder



Overview

This Chapter describes the programming procedures for all of the Recorders.

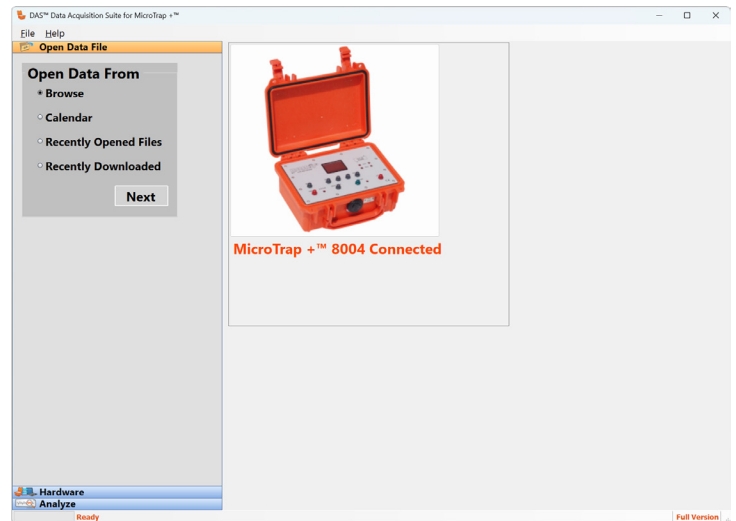
4.1 Programming the MicroTrap +™ VOD Recorder

The **MicroTrap +™ VOD Recorder** has the ability to record the velocity of detonation (VOD) as the sttwo channels. In order to program the **MicroTrap +™ VOD Recorder**, the USB interface cable has been connected to the computer. The cable is then connected to the **MicroTrap +™ VOD Recorder** after 10 seconds, the unit is powered on. If unsure how to complete this task, refer to the **MicroTrap +™ VOD Recorder Operations Manual**.

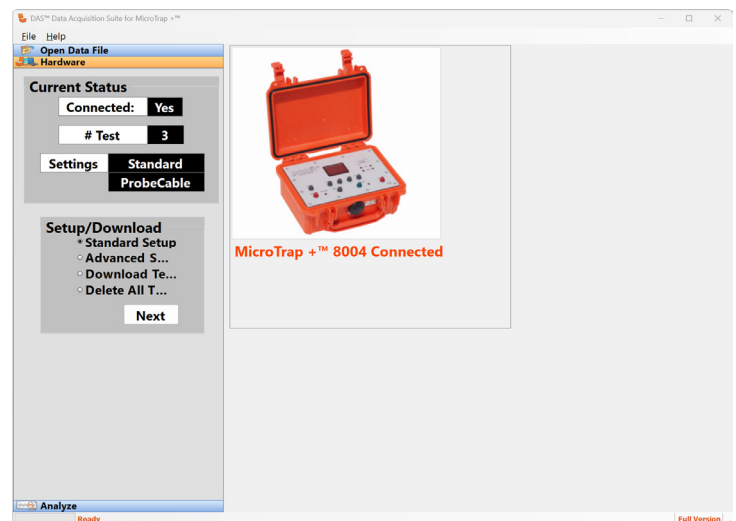
4.1.1 VOD Setup in the MicroTrap +™ VOD Recorder

With the **MicroTrap +™ VOD Recorder** connected to the computer, start the **DAS™ Data Acquisition Suite for MicroTrap +™**. Upon fully starting, the screen will appear as shown to the right.

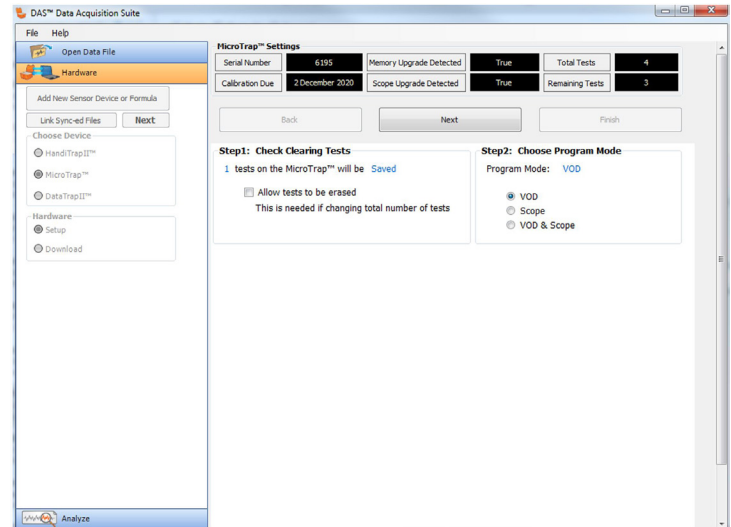
Click on the **Hardware** tab on the left panel of the screen (As marked in the right image) and the image on the next page will be displayed.



Click on the **Standard Setup** radio button under **Choose Device** and the Setup radio button under **Hardware**. Then click on the **Next** button.



This screen will display many details of the individual unit. This includes the **serial number** and **calibration due date**.



On this screen, the user will be able to adjust all of the **VOD** settings on the **MicroTrap +™ VOD Recorder**. The options will be **ProbeCable**, **ProbeRod** and **Detonator Timing**. These are standard setups for the desired testing. If you are looking for more control on the settings, please use the **Advanced Setup**. Within this menu, the following items can be adjusted. This includes the **VOD Trigger Level**, **Trigger Type**. Refer to the **MicroTrap +™ VOD Recorder Operations Manual** for definitions on these settings. Once the settings have been selected, click on **Store Settings** button.

Auto Advance will allow the unit to continue to trigger when a valid trigger is received. This will assist with false triggering as it will continue to trigger until the **STOP** Button is pressed. This will setup tests within a session. To assist in selecting the correct test, note the time of the blast as the real time clock will display the time of the recording.

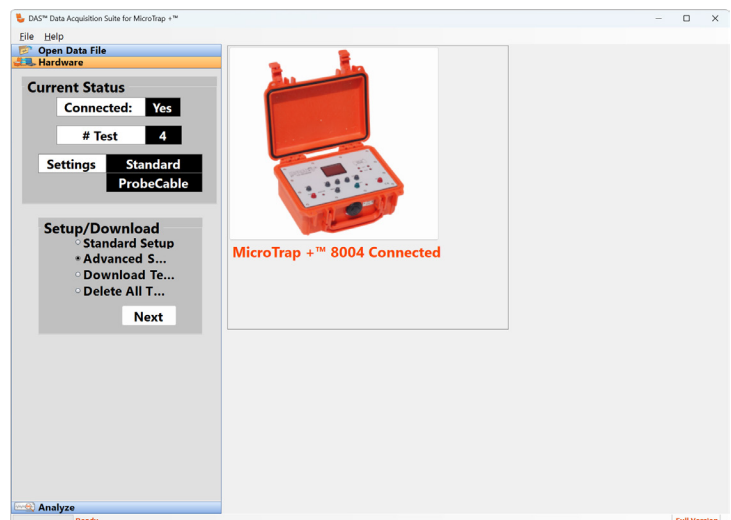
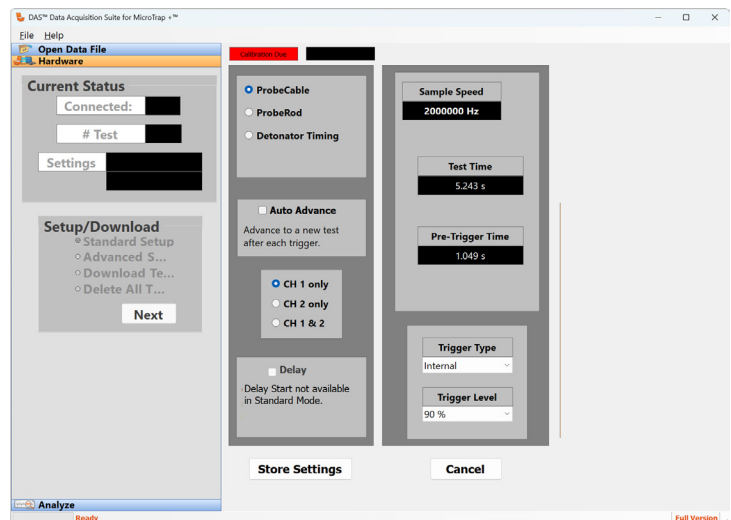
Delay Mode is not available in the Standard setup. To use this mode, please select **Advanced Setup**.

4.1.2 Advanced Setup

With the **MicroTrap +™ VOD Recorder** connected to the computer, start the **DAS™ Data Acquisition Suite for MicroTrap +™**.

Upon fully starting, the screen will appear as shown to the right.

Click on the **Hardware** tab on the left panel of the screen (As marked in the right image) and the image on the next page will be displayed. Select the **Advanced Setup** radio button. Then click on the **Next** button.

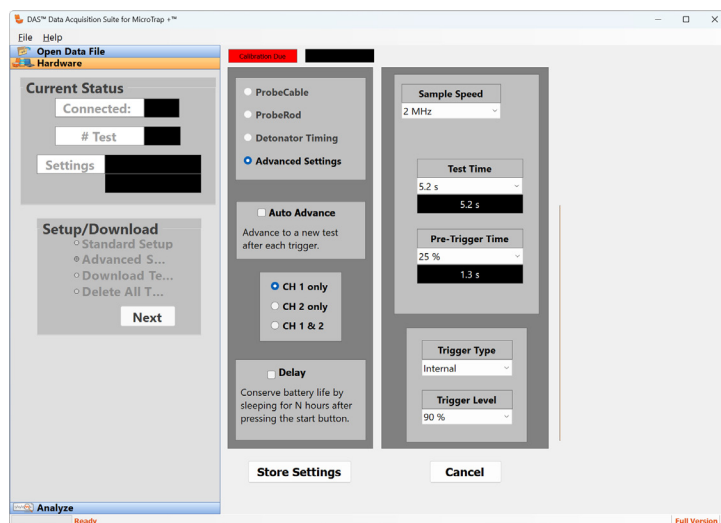


On this screen, the user will be able to adjust all of the **VOD** settings on the **MicroTrap +™ VOD Recorder**. The options will be **Advanced Settings** as the other options are grayed out. Within this menu, the following items can be adjusted. This includes the **Sample Speed** (2, 1 MHz, 500, 100 kHz), **Test Time**, **Pre-Trigger Time**, **VOD Trigger Level**, and **Trigger Type**. Refer to the **MicroTrap +™ VOD Recorder Operations Manual** for definitions on these settings. Once the settings have been selected, click on **Store Settings** button.

Auto Advance will allow the unit to continue to trigger when a valid trigger is received. This will assist with false triggering as it will continue to trigger until the **STOP** Button is pressed. This will setup tests within a session. To assist in selecting the correct test, note the time of the blast as the real time clock will display the time of the recording.

Delay Mode will delay the powering up of the unit to allow for the conservation of the battery. If this mode is selected, an option from 1 to 23 hours is available. When the value is selected and the unit is properly connected in the field, when the **START** Button is pressed, the unit will power off. It will turn on after the selected number of hours and then will wait for a valid trigger.

This is useful when the equipment needs to be left in place for a long time before the event.

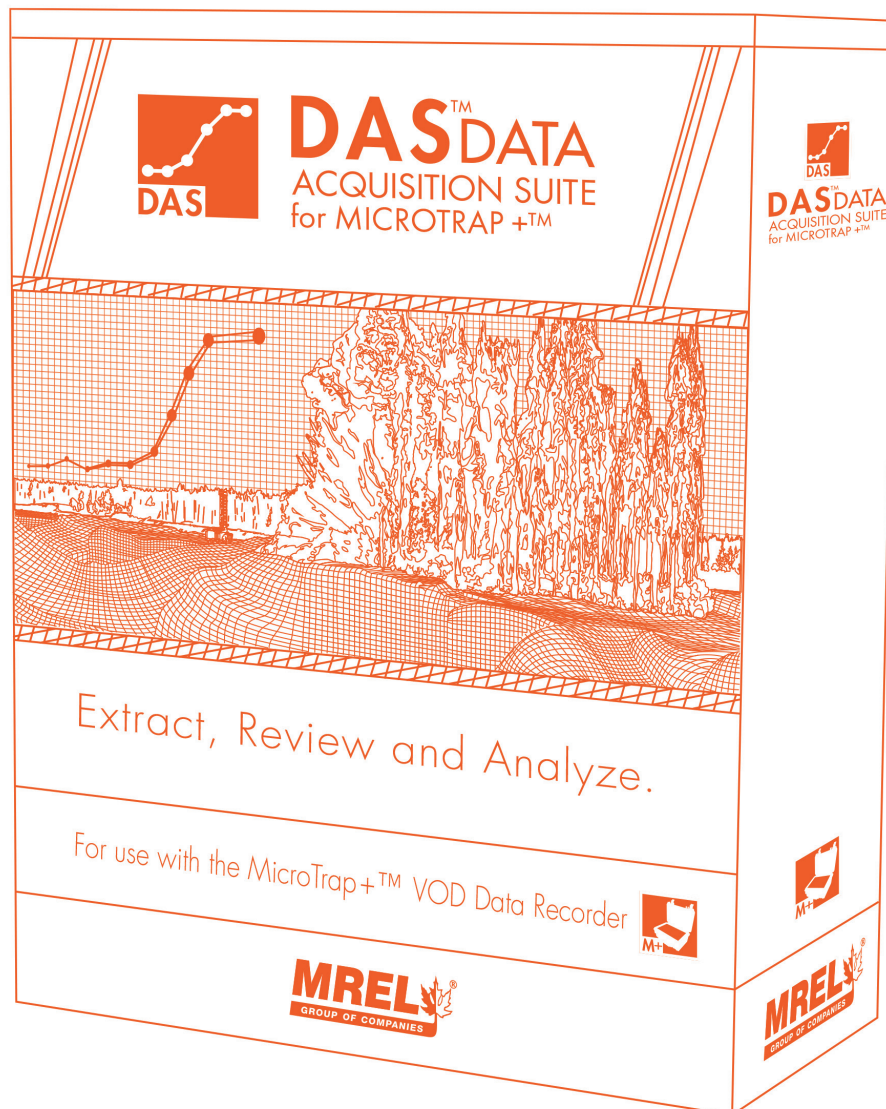


4.1.3 Delete All Tests

When this option is selected from the **Hardware** tab, click the Next button. A popup will ask if you wish to delete all of the tests. If you do, click **Yes**. If not, click **No**.

Chapter 5

Downloading from the MicroTrap +™ VOD Recorder



Overview

This section describes how the data is retrieved from the recorders. Here the procedure is described for each type of recorder.

5.1 Downloading from the MicroTrap +™ VOD Recorder

This section will detail the download procedure for the **MicroTrap +™ VOD Recorder**. With the unit connected to the computer and the hardware tab selected, the follow screen will be displayed.

With the radio buttons selected of **MicroTrap +™ VOD Recorder** in the **Choose Device** section and **Download** selected in the **Hardware** section. There are two types of downloads that can occur with the **MicroTrap +™ VOD Recorder**. When there are more than one test stored in the memory of the unit, both radio buttons are available, **Download All Tests** and **Download Selected Tests**. This manual will step through both options.

This screen is displaying the directory structure, the file name of the file, the selected resistance of the VOD Sensor (as shown on the package) as well as the active channels.

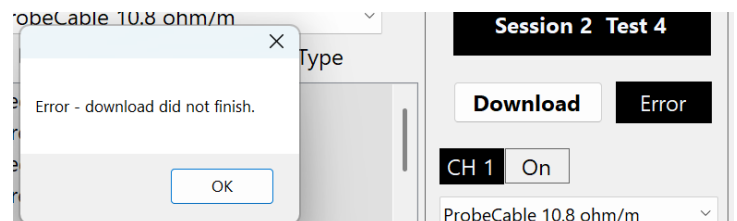
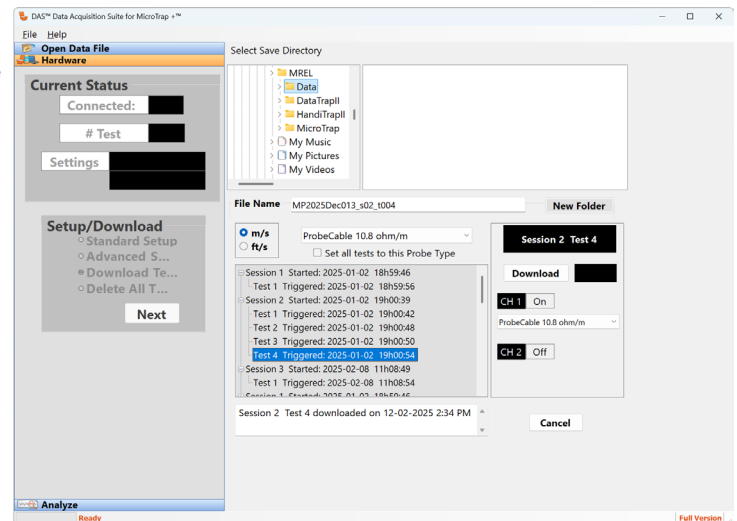
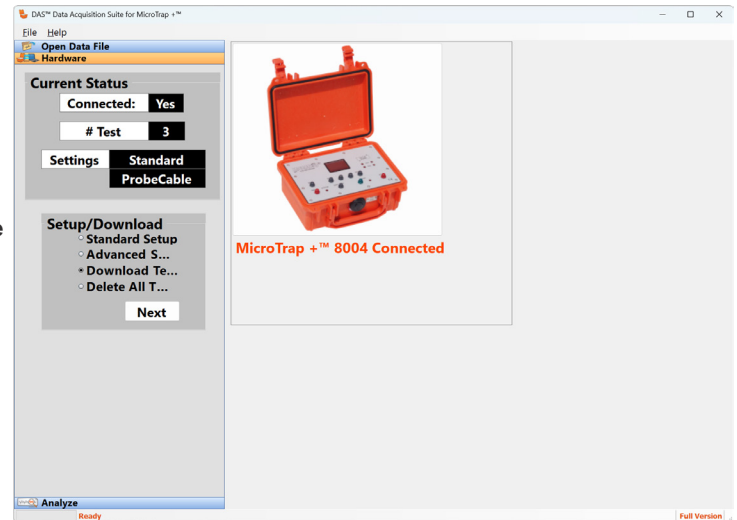
With the **MicroTrap +™ VOD Recorder**, the unit will record a session for each time that the **START** Button has been pressed. If using the **Auto Advance** setting during setup, a test will be created for each valid trigger that is received inside of the session.

If **Auto Advance** is not selected, the **MicroTrap +™ VOD Recorder** will have one test within each session.

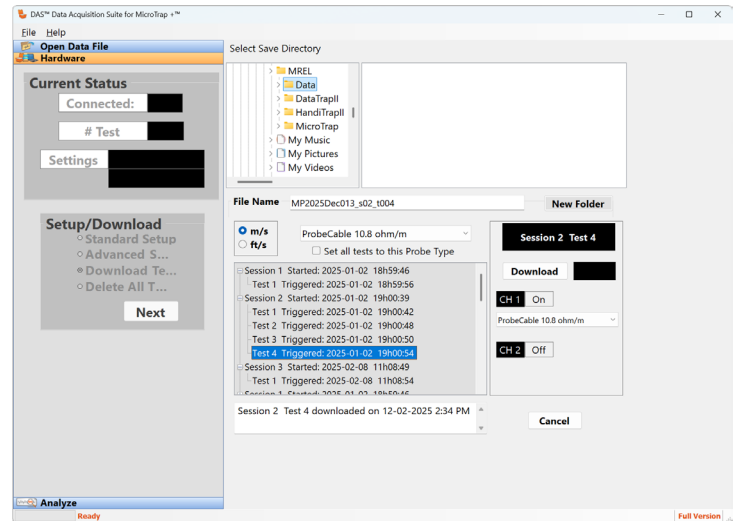
When all of the information has been entered into the text box (this information will always be available with this file) and navigated to the desired location, click download.

If an error occurs during the download of the file, the following message will be displayed. I will have a popup box with the error message as well as Error displayed beside the **Download** Button.

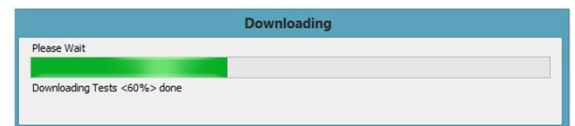
To proceed, click OK and try and download again. If the error persists, please restart the program.



This is the screen that the user will view showing the directory/file structure of the computer. The user will need to select a directory on the hard drive where the data is to be saved. With the directory selected, an appropriate file name for the group of tests that are to be downloaded needs to be entered in the **File Name** text box. The default file name provided can be used as well.

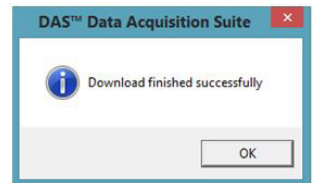


When the **Download** button is clicked, the following progress bar is displayed.

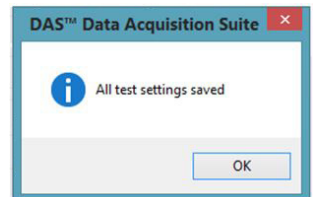


Note: For **VOD** channels, the correct Probe **MUST** be selected. This cannot be changed later.

When the **Download button** is clicked, the following progress bar is displayed.



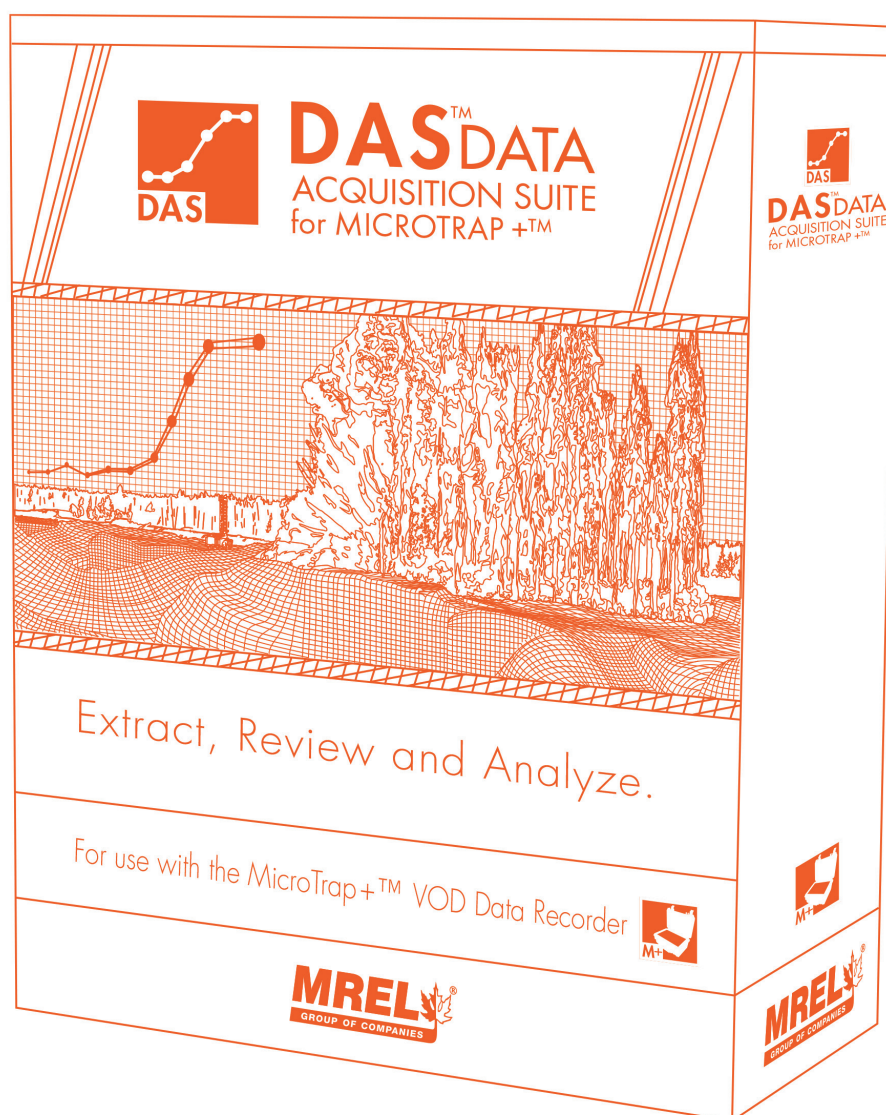
When the download has been completed, click **OK** to display the **Accept** screen as shown.





Chapter 6

Opening a Data File



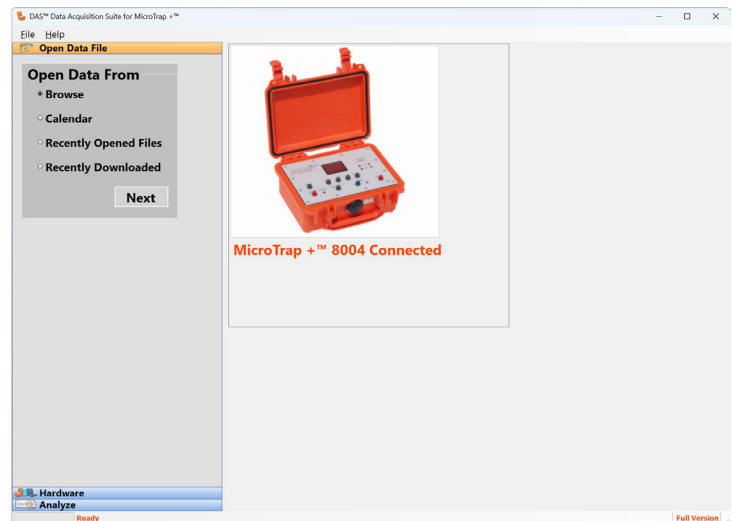
Overview

This section describes how to open a previously saved data file downloaded from either a HandiTrap II™ VOD Recorder, MicroTrap +™ VOD Recorder or DataTrap II™ Data/VOD Recorder.

6.1 Selecting a Data File

From the main screen, select the **Open Data File** tab. The following screen will be displayed.

By default, all recorder data file types are selected (DT2-DataTrap II™ Data/VOD Recorder, HT2-HandiTrap II™ VOD Recorder, MT-MicroTrap +™ VOD Recorder). The user can select only the one type of file if desired. Once the desired file type is selected to be visible in the next screen, there are four (4) different ways to search for a file. They are **Browse**, **Recently Opened Files**, **Recently Downloaded** and **Calendar**.

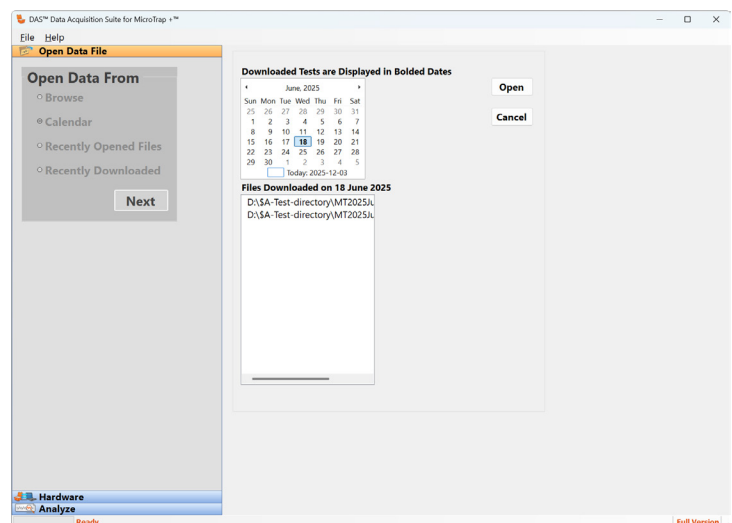


6.2 Calendar

This section is used to open a file if the download date is known.

With the **Calendar** radio button selected and selecting **Next**, the following window will be displayed.

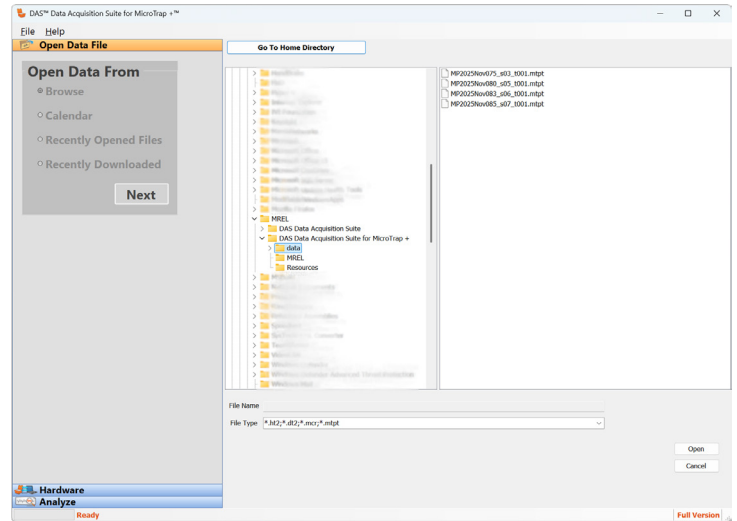
This option will display a calendar for the user to select the date that the file was downloaded. A blue box is placed around the current date and the date that is in bold font has a file associated with that date. In this example, June 18, 2025 has data files associated with the date. In the box below is the file location of the data with the file name. All of the files downloaded on the selected date will show in the bottom window. The user will select the file from the bottom box and click **Open**. The file will open in the **Analyze** tab. If no files are to be opened, click **Cancel**.



6.3 Browse

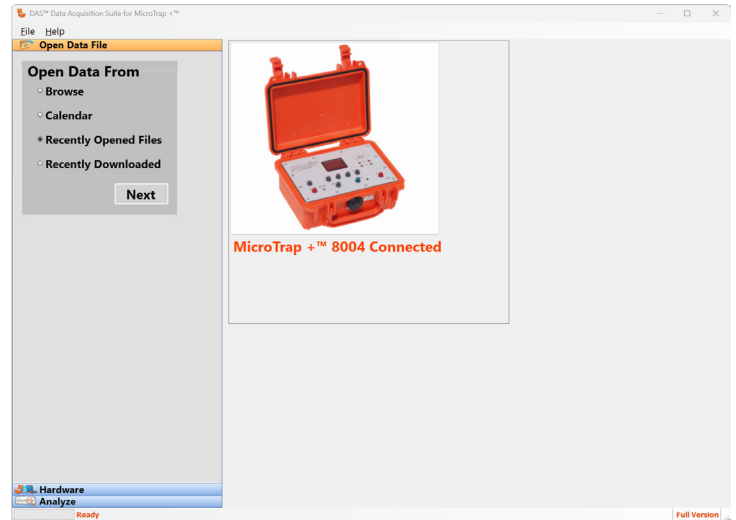
The **Browse** feature is the typical way to use the file browser to find a file. By clicking the **Browse** radio button and selecting Next, the following screen will be displayed.

This screen will allow the user to navigate through the directory/file structure of the computer to find the desired file. From the previous page, only the selected file types will be displayed. The user can click on **Go To Home** to return to the default directory defined in the software. When the desired file is located, select the file by left clicking on the file name once and then clicking **Open**. To stop the process, click **Cancel**. When **Open** has been clicked, the file will start to load. After file is loaded, the main window will return with the **Analyze** tab opened. To analyze the data, refer to the **Analyze** section.



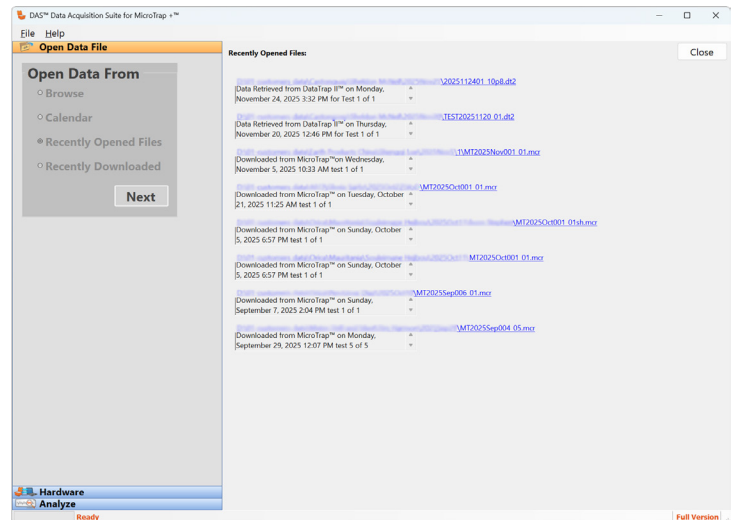
6.4 Recently Opened Files

This section is used to open a file that has been opened recently. The computer will record the files that have been opened and will produce a list of files for the user.



The user will select **Recently Opened Files** radio button from the **Open Data File** tab and select **Next** and the following window will appear.

The **DAS™ Data Acquisition Suite for MicroTrap +™** will display eight (8) previously opened files. This includes all of the file types selected in the **File Type** window in the previous section. The user will just click on the blue link and the file will open and the file will show up in the **Analyze** tab. If no files wish to be opened from the list, the user can click **Close**.

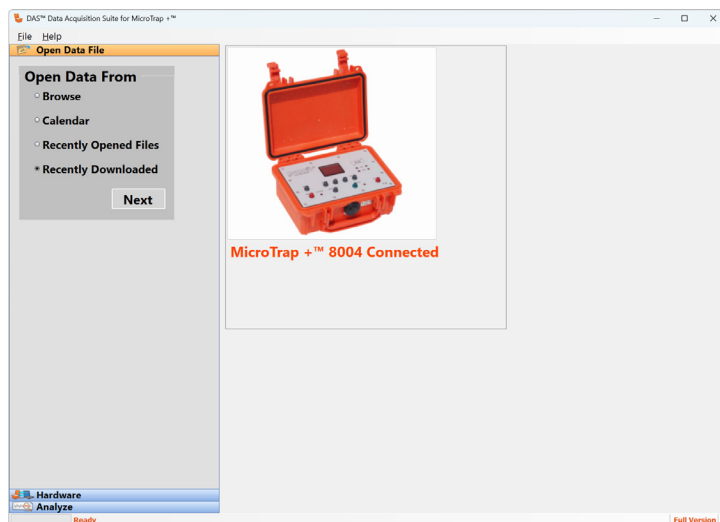


6.5 Recently Downloaded Files

This option will open a list of the most recent downloaded files from the recorders.

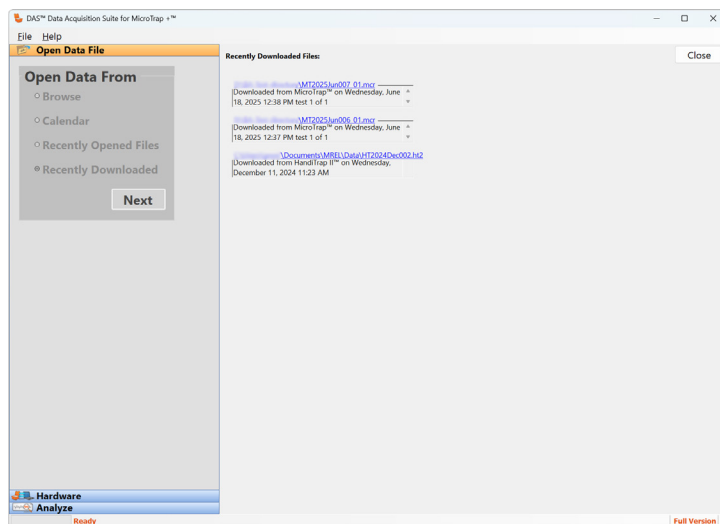
With the **Recently Downloaded** radio button selected and selecting **Next**, the following window will be displayed.

The **DAS™ Data Acquisition Suite for MicroTrap +™** will display eight (8) previously downloaded files. This includes all of the file types selected in the **File Type** window in the previous section. The user will just click on the blue link and the file will open and the file will show up in the **Analyze** tab. If no files wish to be opened from the list, the user can click **Close**.



If there is a **zip button** present next to a file entry, clicking it will create a **zip** file of original data on your desktop.

That is useful if you want to send data to **MREL** (see **Section 10.2**)

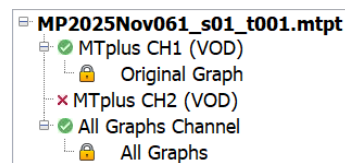


6.6 Working With the Data File

The image to the right shows a data file **MP2025Nov061_s01_t001.mtpt**. It shows **Channel 1** is **ON** while **Channel 2** is **OFF**.

The meaning of the lock is that the data cannot be modified on permanent basis or saved though it allows you to work with it. A user should always create a saved graph to work on. A saved graph needs to be created for **VOD** calculations. To create savable graphs, the user can **Right-Click** on the locked graph and save it as a different graph (a default name is suggested). The saved graph can also be deleted in this manner.

An **Active Plot** is normally required to do most operations such as exporting data, change plot line or point colour, creating point cursors, creating annotations, creating **VOD** or **Delta** calculations. For making a plot active, check mark a plot entry in **Active Plot Selector Grid** on the lower left of **Analysis** tab. Only one plot in a graph can be active at a given time.

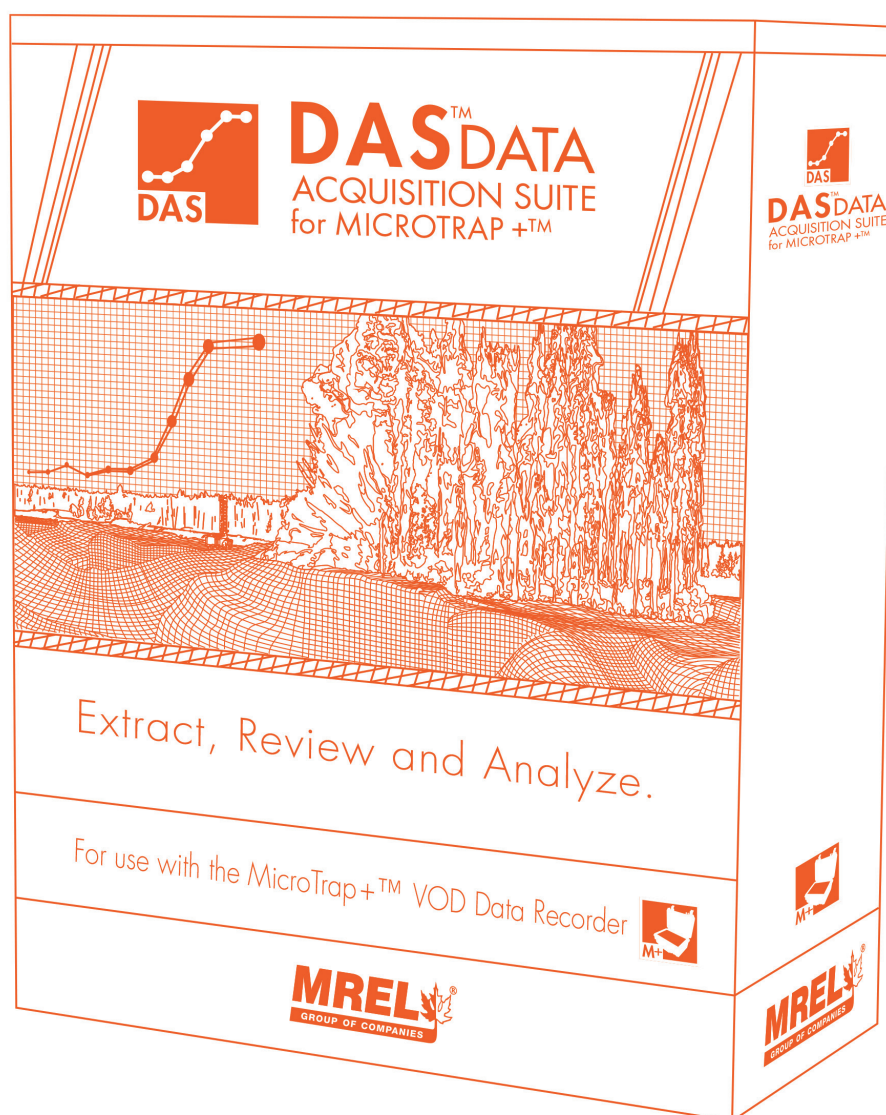


6.7 Closing a Data File

To close a data file, **Right-Click** on the file name in the **Graph Tree** and select **Close**. The software will ask for a confirmation, click **Yes** to close the file or **No** to cancel and return to the file. The user can also use **Close All** in top **File** menu which closes all opened files.

Chapter 7

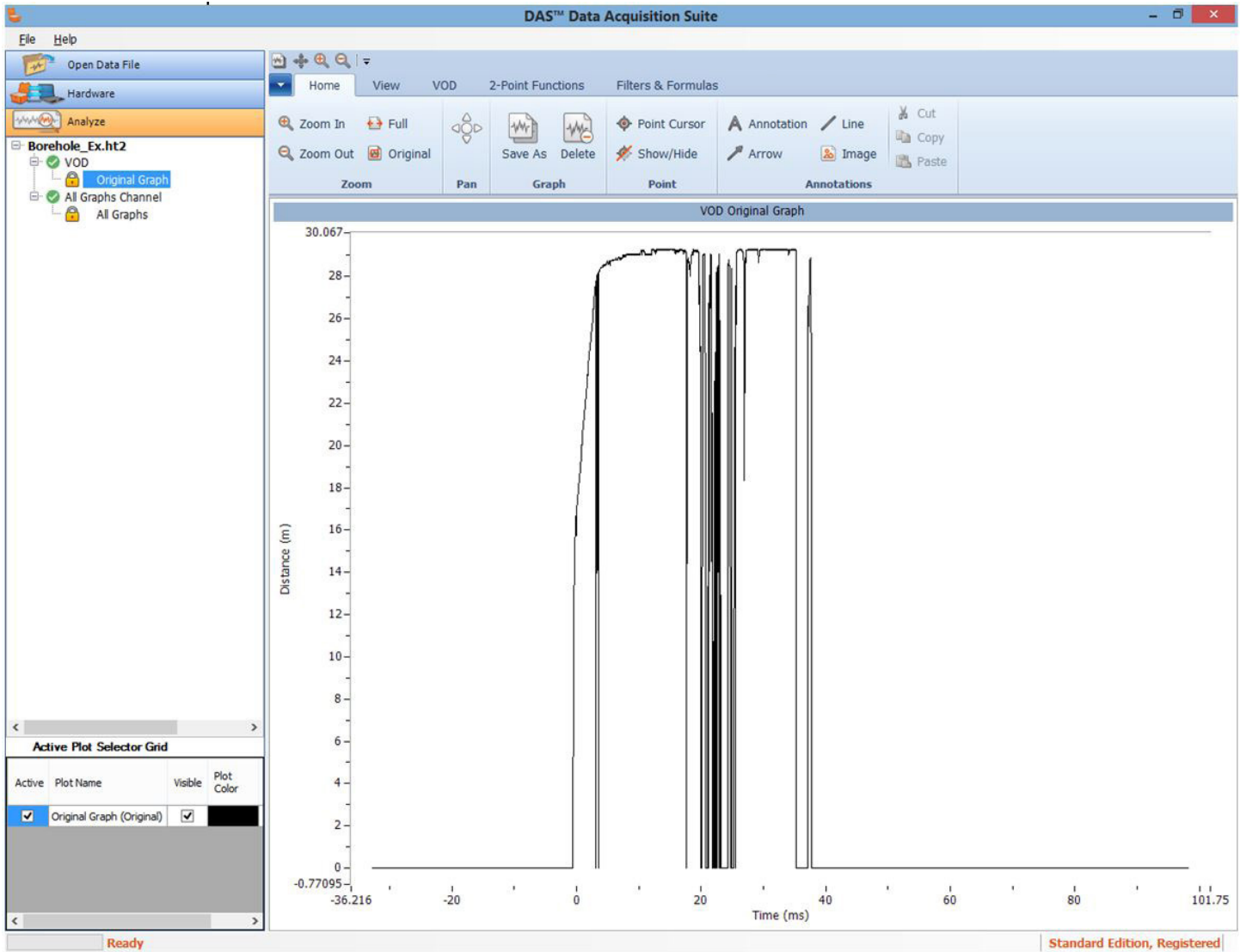
Data Analysis



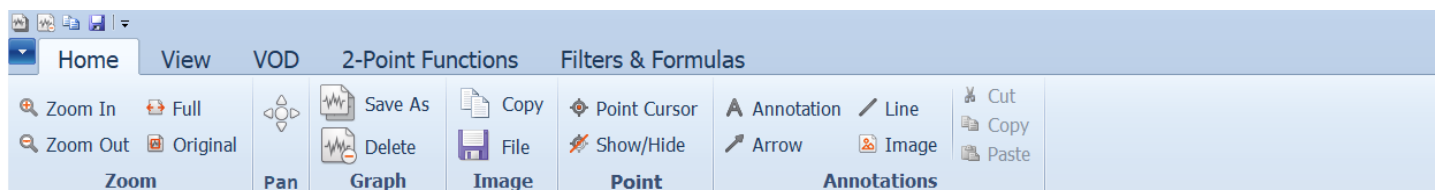
Overview

This section will detail the analysis of the data collected from the MicroTrap +™ VOD Recorder.

This section will detail the analysis of the data collected from the recorders. It will show how the software will work and not the correct or incorrect way to analyze certain types of data. Below is the view of the software with a data file open. Across the top of the screen is a ribbon menu with five (5) different tabs.



7.1 Home Tab

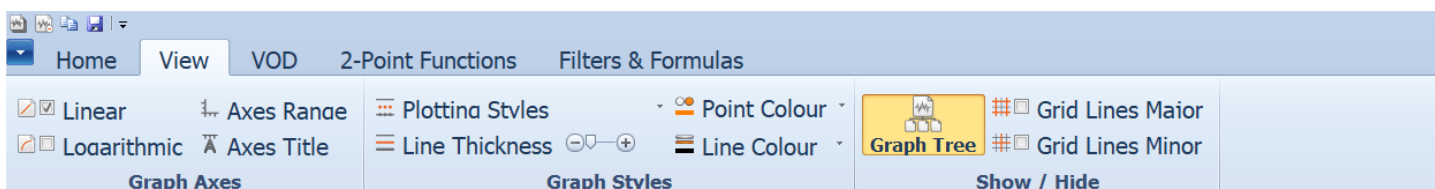


In the **Home** tab most functions are of general nature that are used in graphing, saving and zooming. It includes the following functions:

- Zoom In** – Allows the user to zoom in on the graph to an area of interest.
 The feature works by clicking on **Zoom In** and selecting a box around the area of interest by dragging a mouse with left mouse button pressed in.
- Zoom Out** – Allows the user to zoom out.
 Click on **Zoom Out** as many times it is required or until the full view has been reached.
- Full** – Allows a single button click to zoom out to the maximum range of the graph. Click on once for maximum zoomed out area.
- Original** – Allows a one button click to zoom out to the maximum range of the saved graph.
 Click on once for the saved graph to return to its original saved range.
- Pan** – Allows for the scrolling of the graph.
 The pan button is a toggle **ON** or **OFF**. When it is on, the mouse can be used to click in and drag the graph.
- Save As** – Allows a graph to be saved as a new graph with the current zoomed range.
 With the current viewable area as desired range, click on **Save As** and a text box will pop up to allow a name to be entered by the user.
- Delete** – Allows the **Saved As** graphs to be deleted. Will not delete the original graphs.
 With a saved graph selected, the user can click this button and a conformation box will appear to confirm the deletion of the graph.
- Copy** - Copies the current graph to the clipboard as a bitmap image. User then can paste this image in another suitable word processing software such as MS Word, WordPad etc.
- File** - Save the current graph image to a file as a JPG, MBP or PNG file.
- Point Cursor** – Creates a movable vertical point cursor which shows the X, Y coordinate of current data point on the graph.
 Click on the button and follow the on screen directions. The **Point Cursor** can be moved with the mouse or the left and right arrow keys. To select an individual point, the user may need to zoom in closer to select the desired point. The user can have multiple **Point Cursors** on the screen. To remove, **Right-Click** on the **Point Cursor** and select **Delete**. Also with the **Right-Click** on the **Point Cursor** and selecting **Modify**, the user can adjust all of the individual properties on the **Point Cursor**.
 The **Show/Hide Point Cursor** will allow the user to copy the individual coordinates pointed by point cursors to the clipboard to be pasted into a different application.
- Show/Hide** - Will allow the user to copy the individual coordinates pointed by the point cursors in the graph to the clipboard so as to be pasted into a different application. Click on the button. It can also be found in the **Right-Click** context menu of the individual **Point Cursor** or graph.

- **Annotation** – Will allow user to enter text onto the graph. Follow the instructions on screen.
Click on the button and then click on the screen. **Right-Click** on the **Annotation** and select **Modify** to modify the text, colour or font. From the **Right-Click** menu, the user can also delete the **Annotation**.
- **Arrow** – Will allow the user to draw an **Arrow** with a caption.
The user will draw an arrow with a textual caption attached to the end of the line. The user can change the text in the box by right-clicking and selecting **Modify**. The shape at the arrow end of the line can be removed by in the same **Modify** box, scroll down to **ShapeStyle** and select none. The arrow tip can not be moved without a **ShapeStyle** present.
- **Line** – Will allow the user to draw a Line.
The user will click on the **Line** button and follow the on screen instructions. The line can be extended or moved. User can modify its font or thickness using its Modify context menu.
- **Image** – Will allow the user to insert a picture.
The user will click on Image and follow the on screen directions. A directory/file structure window will pop up of the local computer. The user can navigate the computer and select the image of interest. The user will need to select top-left corner of the image to drag it to the area of interest and will be able to **Right-Click** on the corner to select **Modify** and adjust the displayed size. The **Modify** dialog box also allows user to select a different image using “**Change...**” button.
- **Cut** – Will allow the selected annotation to be cut. The selected annotation has a red rectangle around it when user **Left-Click** it once.
The user will need to select an item and then select **Cut**. If no item or a non-valid item is selected, the **Cut** button will not be available. The item will be placed on the computer’s clipboard.
- **Copy** – Will allow the selected annotation to be copied.
The user will need to select an annotation and then select Copy. If no annotation or a non-valid item is selected, the Copy button will not be available. The annotation will be placed on the computer’s clipboard.
- **Paste** – Will allow the last copied or cut annotation to be pasted.
This button will allow the user to **Paste** the item in the same graph that has been placed on the computer’s clipboard. Note that annotation can be pasted to different graph nodes of the same or different data file (in version later than 1.0.0.0). **VOD** and Delta values cannot be copied or pasted.

7.2 View Tab



In the **View tab** are features that effect how the data is displayed.

- **Linear** – Displays the X and Y axes with a linear scale.
The user can click on the Linear check box to change the axes to **Logarithmic**
- **Logarithmic** – Displays the X and Y axes with a logarithmic scale.
The user can click on the **Logarithmic** check box to change the axes to Linear

- **Axes Range** – Displays the following text box for the user to manually enter the axes range

The user can enter specific ranges into the menu without the requirement to zoom. Enter the desired values and click **Apply** or if no changes are desired, click **Close**.

Change Plot Axis Limits

	Minimum	Maximum
X-Axis	-36.21623770	101.75323770
Y-Axis	-0.770949207	30.067011740

Apply Close

- **Axes Title** – Allows the user to modify the axes titles or graph caption. The user can modify the titles by entering the desired information in the text box and clicking **Apply**. If no changes are desired, click **Cancel**.

From the main graph window, **CTRL Key + Left-Click** on the X-axis, Y-axis or graph caption bar to display individual title change dialog.

Set Axes or Graph Captions

X-Axis Caption: Time (ms)

Y-Axis Caption: Distance (m)

Graph Caption: VOD Original Graph

Apply Cancel

- **Plotting Styles** – Allows the user to change the way a plot is drawn. The default is **Line** connecting the data points with a line. **Point** will only display the data points while **Point + Line** will display both. Only the **Active** plot is affected.

Plotting Styles

- Line (checked)
- Point
- Point + Line

- **Line Thickness** – Allows the user to change the line thickness of the active plot. The user can either click and drag the slider bar or use the **+** and **-** buttons to change the thickness of the drawn line.

Line Thickness - +

- **Point Colour** – Allows the user to change colour of the data points of active plot. The **Point Colour** button will change the colour of the data points of active plot while the pull down arrow will allow the user to select the colour from a pallet of colours.

Point Colour

Theme Colors

Standard Colors

More Colors...

- **Line Colour** – Will allow the user to change the line colour of the active plot. The **Line Colour** button will change the line colour of the active plot while the pull down arrow will allow the user to select the colour from a pallet of colours.

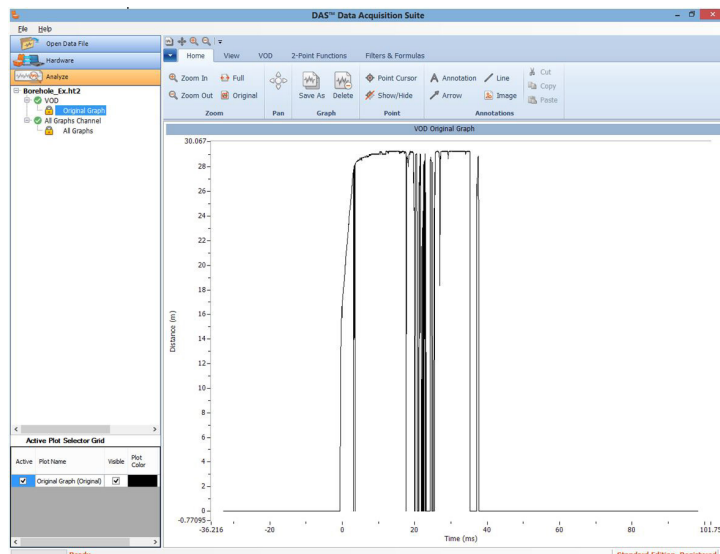
Line Colour

Theme Colors

Standard Colors

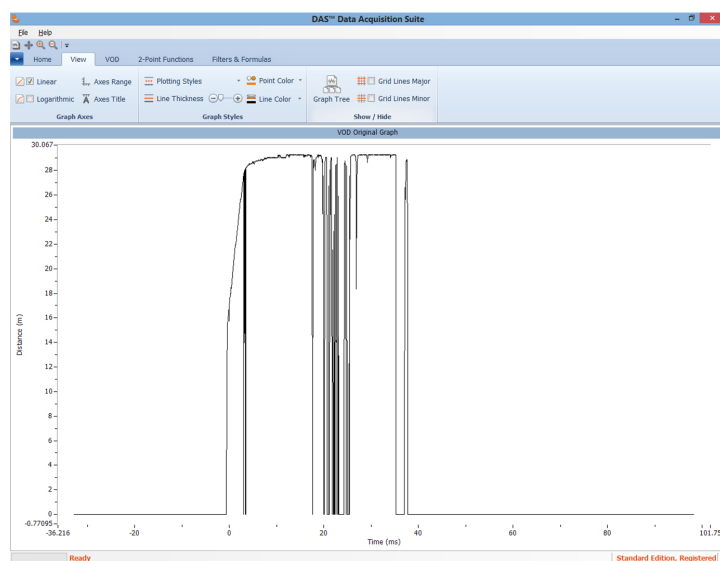
More Colors...

- **Graph Tree** – Allows the user to show and hide the graph tree view on the left side of the screen. It will allow the graph area to extend from the right image all the way to left edge of main window:



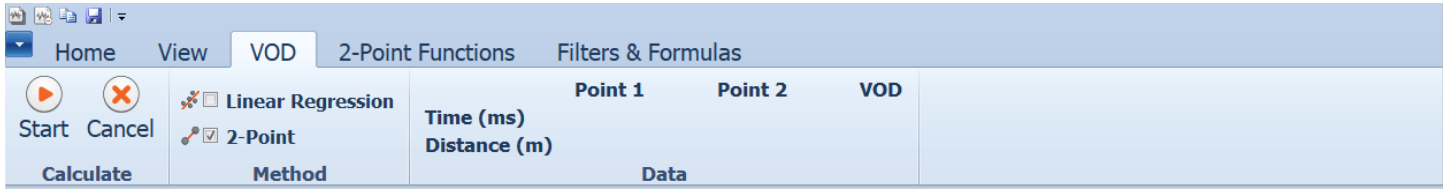
To the image to the right:

A single click on the **Graph Tree** button will change back and forth between the two screens.



- **Grid Lines Major** – By selecting the check box will display the major grid lines. It can be turned on and off by the check box.
- **Grid Lines Minor** – By selecting the check box will display the minor grid lines. It can be turned on and off by the check box.

7.3 VOD Tab

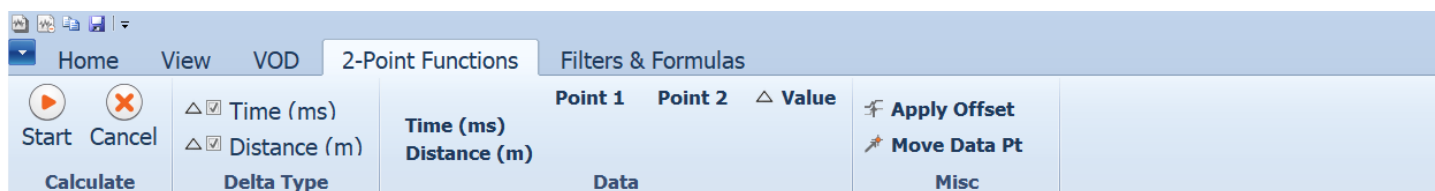


- **Start/Cancel** – Allows the start of the **VOD** measurement. The button will change to **Done** after the process has been started. Follow the on-screen directions and click and drag the vertical point cursors to the desired location. See the **Quick Start Guide** for the use of the button. Clicking **Done** will finish the **VOD** measurement process.
- **Cancel** – Allows the **VOD** measurement to be canceled.
- **Linear Regression** – Allows the user to use **Simple Linear Regression** to produce a line of best fit of the points between the two end points.
The definition of **Simple Linear Regression** is a fit of a straight line through the set of n points in such a way that makes the sum of squared residuals of the model (that is, vertical distances between the points of the data set and the fitted line) as small as possible.
- **2-Point** – Allows the user to measure **VOD** with using only the start and end point.
The **VOD** is calculated by the following equation: $(y_2 - y_1) / (x_2 - x_1)$, where (x_1, y_1) is the first point and (x_2, y_2) is the second point. This is used when the data is 'noisy' and the points in the middle need to be ignored. As long as the line matches the straight edge of the data, then the value obtained from the calculation is valid.
- **Data Section**
In this area, values being calculated are displayed when a **VOD** measurement has started and being calculated dynamically. The **VOD** value will be displayed and will change if the user selects Linear Regression or 2-Point method. The values will change accordingly as user moves vertical data cursors by mouse or left (right) keys. The user can finish **VOD** calculation process either by clicking **Done** button in the **VOD** tab or in "**Choose points for VOD/Delta calculation**" dialog. (See more details in Analysis section or in **built-in help**.)

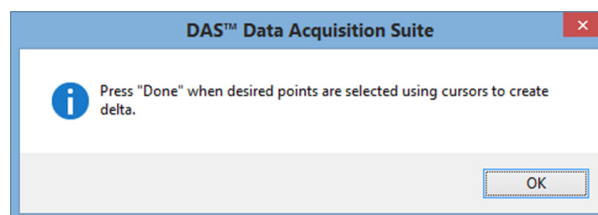
7.3.1 How to measure VOD

See **VOD Analysis Section 7.6**.

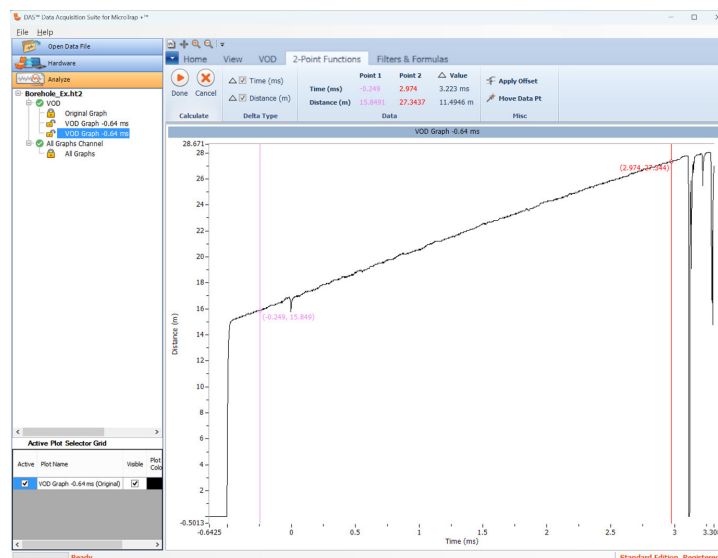
7.4 2-Point Functions Tab



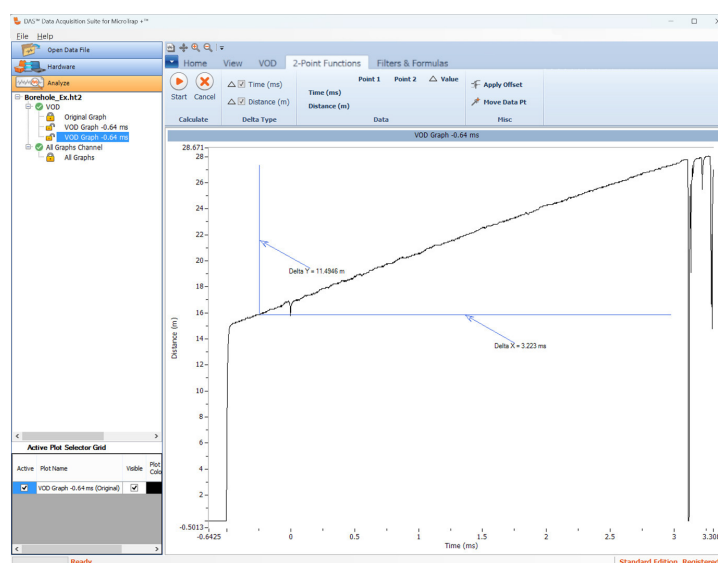
- Start/Done** – Allows the user to measure the amount of time (delta X) and the amount of Y-axis units (meter or feet) (delta Y) between the two selected points.
 The user will select start and will follow the on-screen instruction.



The screen to the right shows the two vertical point cursors and the two (X,Y) points. In the ribbon menu in the **Data** section, the values of the two points and the difference is also displayed.



When **Done** is clicked, the calculated values are shown on the graph as in the second screen.



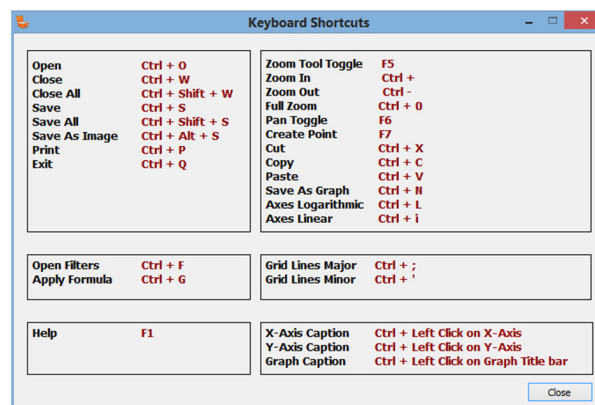
- **Cancel** – The **Cancel** button is to stop the **2-Point Function** operation.
- **Delta X** (x-axis units of graph such as ms, s) – This check box defines if the delta value for quantity X (usually time) is to be calculated and displayed. If the box is unchecked, the delta value will disappear in the Data section. Also, if the box is unchecked, the value will not be calculated or displayed when **Done** is selected.
- **Delta Y** (y-axis units of graph such as m, V or engineering units) – This check box defines if the delta value for quantity Y (such as distance, voltage etc.) is to be calculated and displayed. If the box is unchecked, the delta value will disappear in the Data section. Also, if the box is unchecked, the value will not be displayed during the calculation process or after when **Done** button is clicked.

7.5 Help Tab

This section describes the **Help** tab.



- **About** – Opens the window showing the version number of the software and the contact details for **MREL Group of Companies Limited** including website, email, address and phone and fax numbers.
- **Keyboard Shortcuts** – Displays the keyboard shortcuts. To the right is the screen



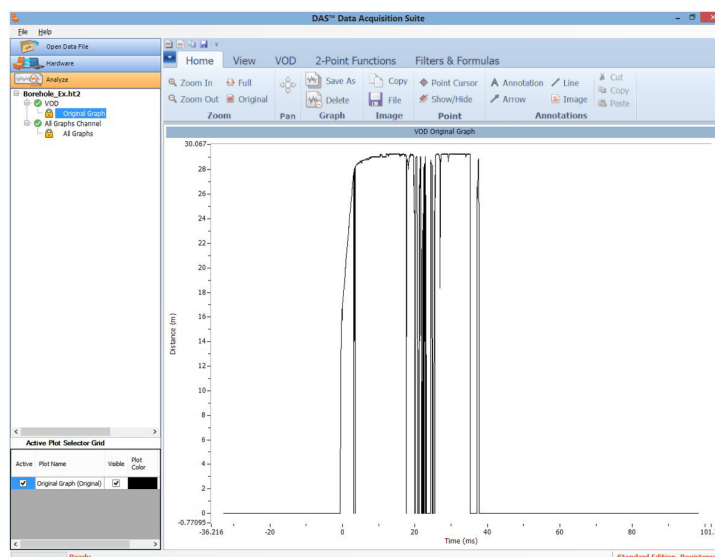
7.6 VOD Analysis

Analysis of **VOD** is the measurement of the velocity of detonation of explosives. The instruments capable of this measurement is: **HandiTrap II™ VOD Recorder**, **MicroTrap +™ VOD Recorder** and **DataTrap II™ Data/VOD Recorder with VOD Upgrade**. With the graph opened, the screen to the right is displayed.

In this example, the file name is **Borehole_Ex.ht2** which is a **HandiTrap II™ VOD Recorder** file. On the left side of the screen, the column displays all of the important information regarding the file. This example shows that there is 1 active **VOD** channel (shown with a green circle with a white check mark).

The user will need to decide which type of **VOD** measurement that is desired: **Linear Regression** or **2-Point**.

Please refer to the descriptions below to which type of **VOD** measurement is desired.



With the desired check box selected and the graph zoomed into the relevant area, click **Start**. The following screen will be displayed.

Click **OK** to continue.

The user will see two vertical point cursors. The selected data points are displayed (X,Y) where the point cursors intersect the data. The user can click and drag the point cursors to the the desired locations. The **VOD Feedback Line** shown in green here, is a visual aid to user so a better close match to actual data can be achieved. If you do not have this, please update **DAS™** to latest version (See **Section 2.8**).

Reconfirm that the desired method has been selected and the **Data** section will display a quick reference to the two points and the **VOD** prior to pressing **Done**.

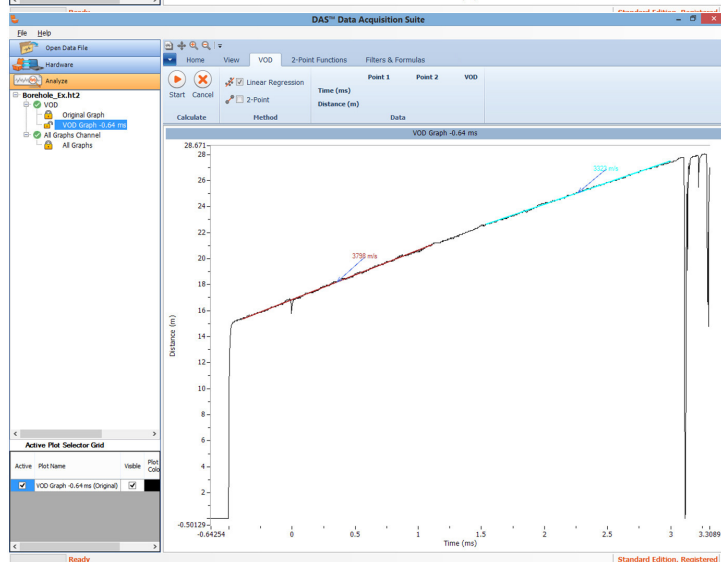
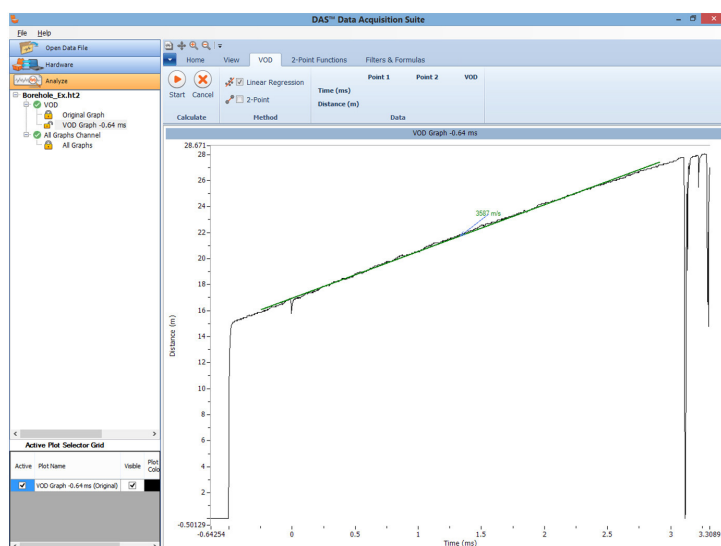
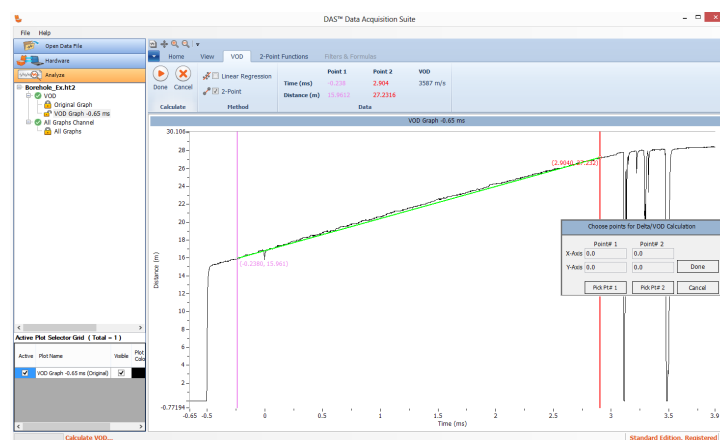
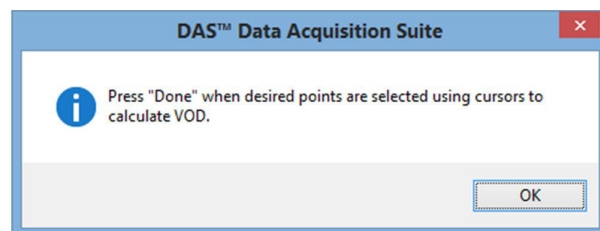
Once **Done** has been pressed and the **VOD** line is displayed, this is the only time that the user can compare the **VOD** line to the data.

If the **VOD** line does not match the data, it is not a valid **VOD** measurement.

As shown in the graph to the right, the selected line is not the best fit for the data. The user can place as many different **VOD** measurements as desired.

The line is shown above the data at the beginning, below in the middle and above the measurement at the end. The image to the right is a better measurement.

From the screen to the right, the two **VOD** lines have been closely fit to the data where each line fits the data in the section of measurement. This shows a change in velocity from the bottom of the hole to the top.

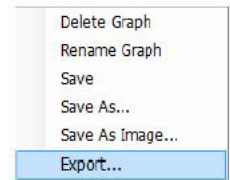


7.7 Exporting Graph

7.7.1 Export Graph Data

Right-Click a graph which displays following context menu.

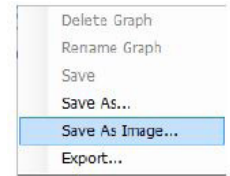
Choose **Export** to export active plot original data range to a CSV file. Or choose **Export Visible** to export active plot data using current visible range of graph to a 2-column CSV file.



7.7.2 Export Graph Image

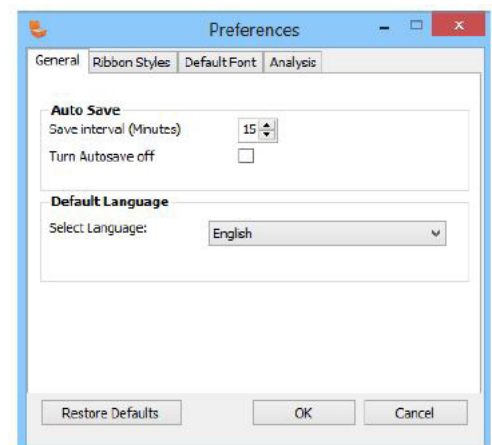
Right-Click a graph which displays following context menu.

Choose **Save As Image** which displays a Save as dialog with directory structure displayed on the computer. The user can save the graph image as Jpeg, Bitmap, Gif and PNG files.



7.8 User Preferences

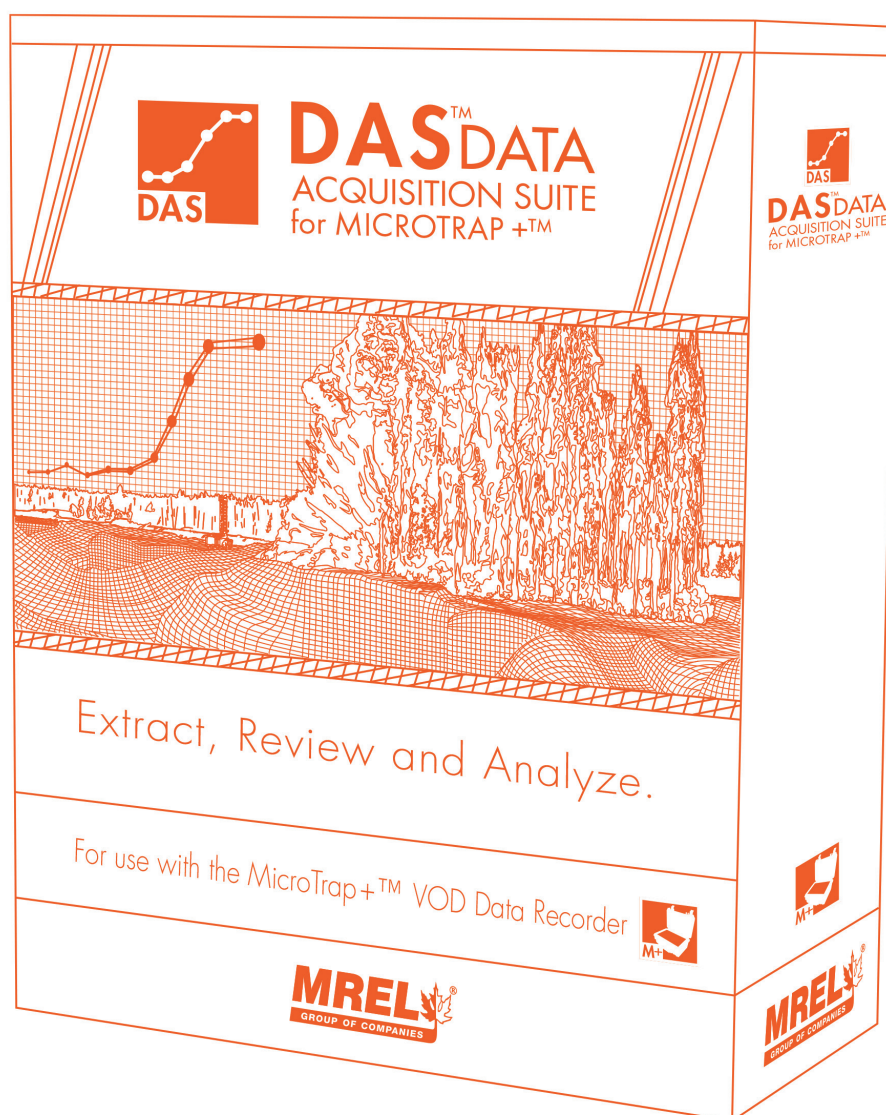
The user can change various preference applicable (some available in version beyond 1.0.0.0) to many aspects of the software operation. These includes **Auto Save**, **Default Language** (English (default) or French), **Ribbon menu Style**, **Default font**, **Active plot legend ON/OFF**, **Export Time units type** (seconds or default), **Apply Offset type** and **Visual Feedback** line colour for **VOD**. These preferences are controlled through the following dialog using menu item **File > Preferences**. See built-in help for details.





Chapter 8

Contacting MREL for Technical Support



8.1 Contacting MREL

MREL Group of Companies Limited

Data Acquisition Team (DAS™) Support Team

5-779 Sir John A MacDonald Blvd.
Kingston, Ontario K7L 1H3
Canada

Toll Free +1-877-544-MREL (Canada/USA)

Tel: +1-613-545-0466

Email: das@mrel.com

Support: www.mrel.com/contact-us

MREL looks forward to providing you with assistance.

8.2 Emailing Data Files to MREL

For **DAS™ Data Acquisition Suite for MicroTrap +™ software**, the user will need to send the following files for analysis of the user's data. In this example, the user's file name is **Myfile**.

8.2.1 MicroTrap +™ VOD Recorder

The following files will be needed:

- Myfile.mtpr
- Myfile.mtpt
- Any related files with the same name such as Myfile.xml and Myfile.zip if applicable



MREL is committed to product innovation; accordingly product may undergo specification improvements without notice.

Copyright © 2025 MREL Group of Companies Limited.

DAS™ Data Acquisition Suite for MicroTrap +™, DAS™ Data Acquisition Suite for MicroTrap +™ Logo, and MREL Logo are trademarks or registered trademarks of MREL Group of Companies Limited.

Windows® is a registered trademark of Microsoft Corporation.

MREL GROUP OF COMPANIES LIMITED

5-779 Sir John A MacDonald Blvd. Kingston, Ontario K7L 1H3 Canada

T: +1-613-545-0466

E: contact@mrel.com

www.mrel.com