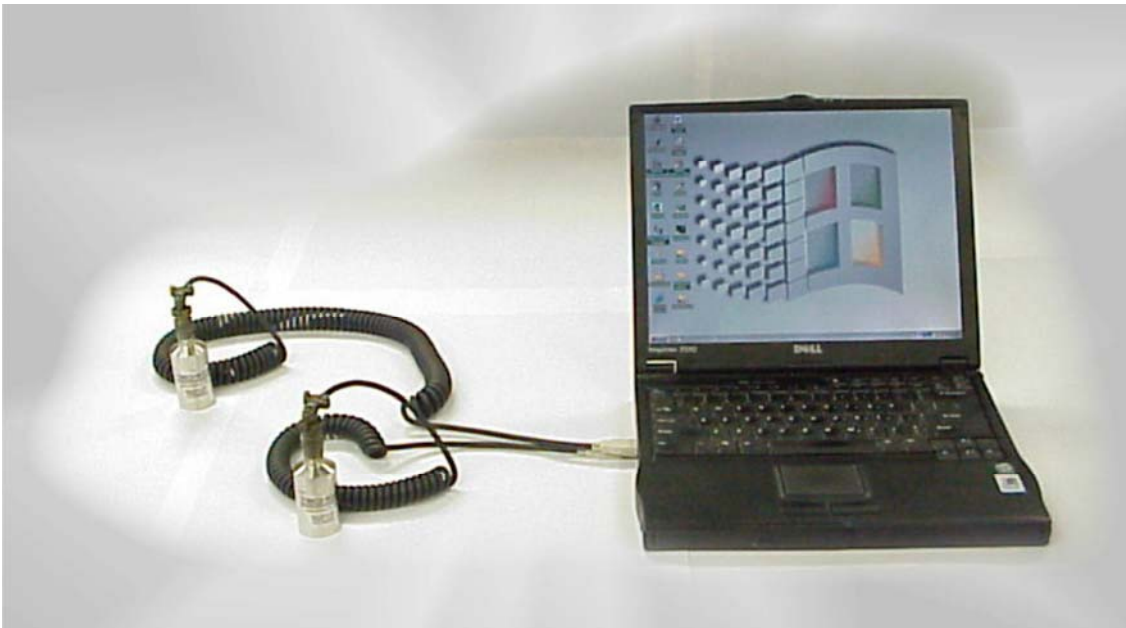


USB VibeHound™ Express *Manual*



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Compatible with:

CD Software Revision 1.0.1.0

Sensor Firmware Revision B.5

Printed in the United States of America

USB VibeHound™

Express *Manual*

USB Vibration Datalogger

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Warning and Disclaimer

Techkor Instrumentation assumes no liability for damages, whether direct or consequential, arising out of the use, or inability to use, this product.

This product is not designed to operate indefinitely. The user assumes full responsibility for all maintenance and testing of the product necessary to ensure proper operation. Any testing situation should have proper backup and redundant systems in place to ensure the safety and quality of the information generated.

The information contained in this literature is based on our experience to date and is believed to be accurate and reliable. However, Techkor Instrumentation assumes no responsibility for the use of such information. The information contained herein is intended as a guide for use by persons having technical skill and at their own discretion and risk.

Introduction and Getting Started

Welcome to the USB VibeHound™ Express vibration datalogger system. This manual will provide you with all of the information required to understand, install, configure, and operate your system. The manual is broken up into several sections. Section I covers the installation of the product, Section II covers basics of the system and software, Section III covers third party interfaces. If at any time during the installation you require assistance, contact technical assistance at 717-939-2300 or 1-800-697-4567.



SECTION I, USB VibeHound™ Express Software Installation

The installation of the product is comprised of two activities – installing the plug-and-play drivers for the USB hardware, and installing the USB VibeHound™ Express software on a Windows PC. Each of these topics is covered in Section I.

The following minimum system requirements are required:

Hardware	Minimum requirements
Computer	Intel Pentium or compatible, 1GHz or higher
Memory (RAM)	256 MB on Windows XP
Hard disk space	20 MB
Drive	CD-ROM drive

Operating Systems Supported:

- Windows XP Professional, Windows XP Home Edition.
- Windows 2000 Professional.
- Windows Vista
- Windows 7

Other Requirements

- USB Port (1.1 or 2.0 compliant)

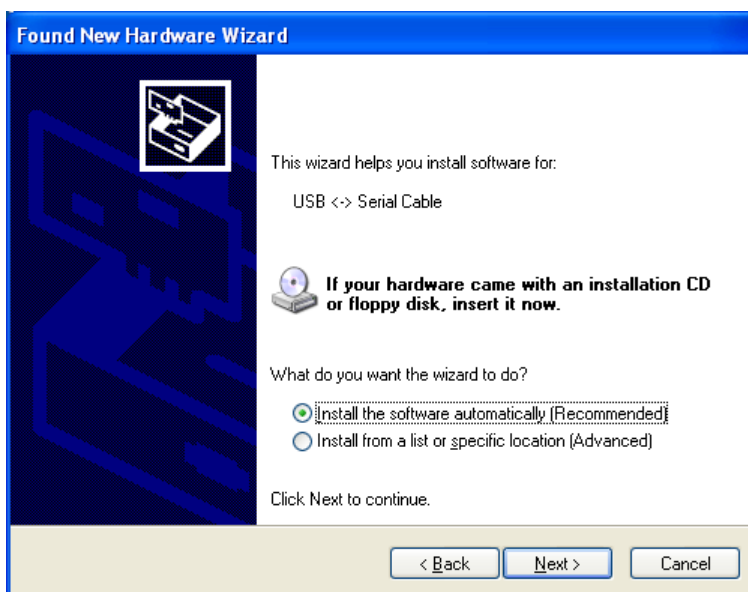
1.1 Installing Plug-and-Play Drivers for the USB Hardware

The USB VibeHound™ Express hardware (USB Data Logger) is supported by Windows plug-and-play drivers. Follow the steps below to install your hardware. It is recommended to use driver from product installation CD (D:\FTDI Driver 2.06.02 – where D: is the letter of the CD-ROM drive). However, newer Windows versions support this driver and it can be installed automatically.

Plug in USB Data Logger and wait for the found new hardware wizard to launch. The following dialog will appear.

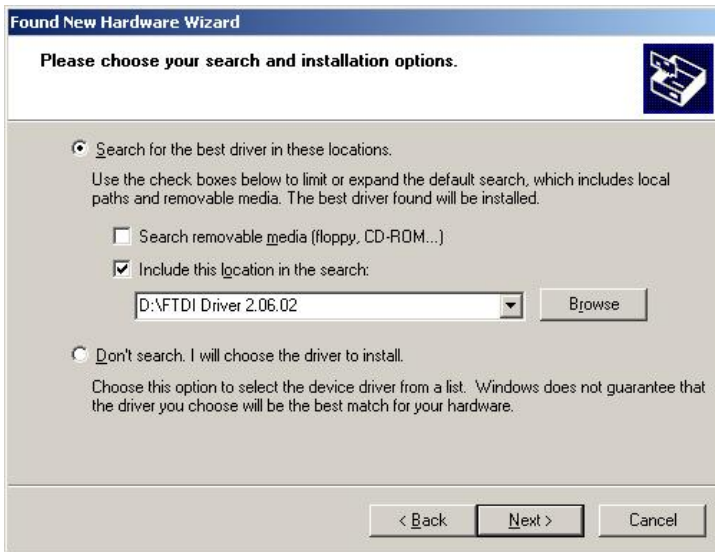


Select “yes, this time only”, and click next. The following dialog will appear.



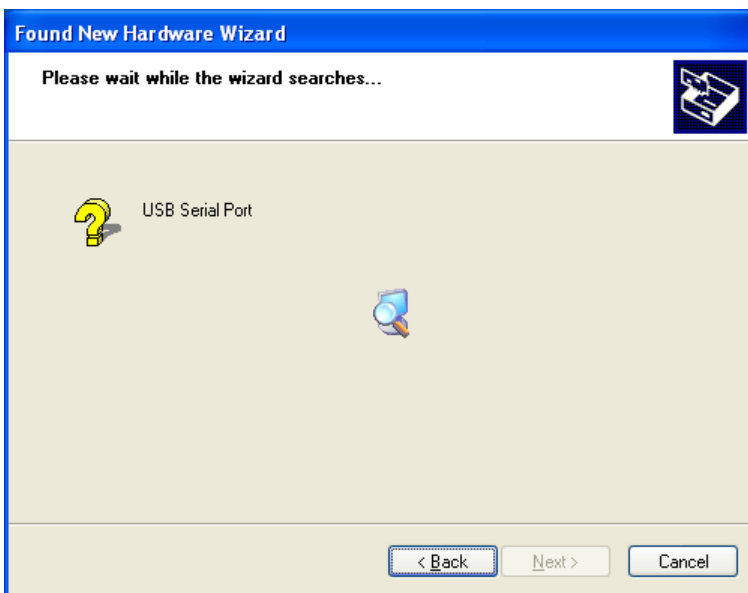
Select “Install from a list of specific location (Advanced)”, and click Next.

The following dialog will appear.



Insert product CD in to the CD-ROM drive. Check box “Include this location in the search and use Browse button to select driver location from CD. Press Next button.

Allow Windows to search for the driver and wait for the following dialog to appear.



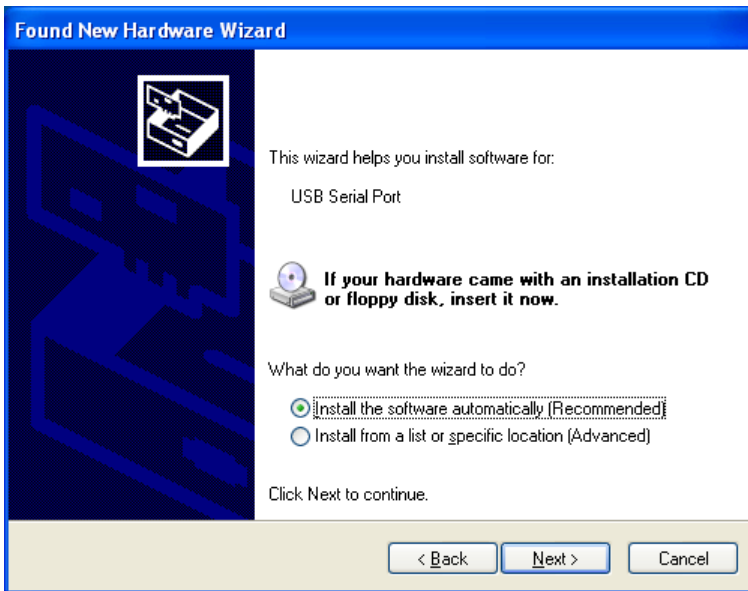


Press "Continue Anyway" in case Windows Logo warning appears.
Click finish.

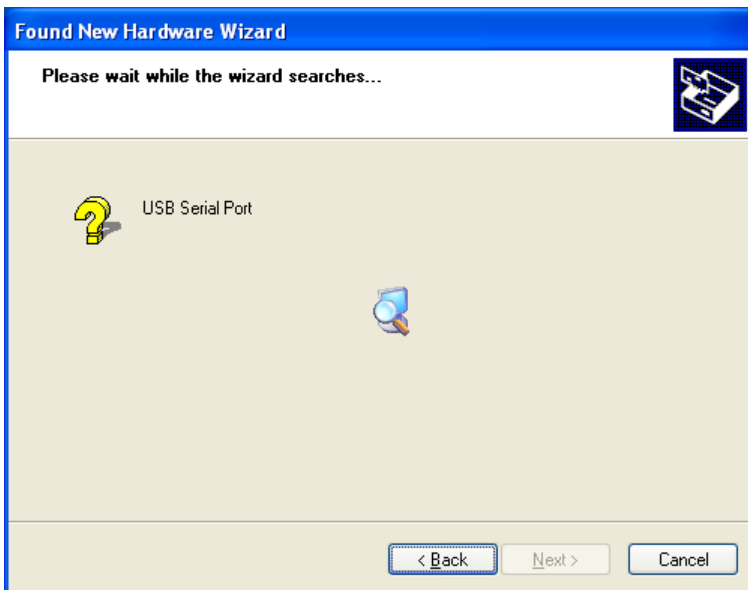
USB Serial Port driver should be detected. The following dialog will appear.



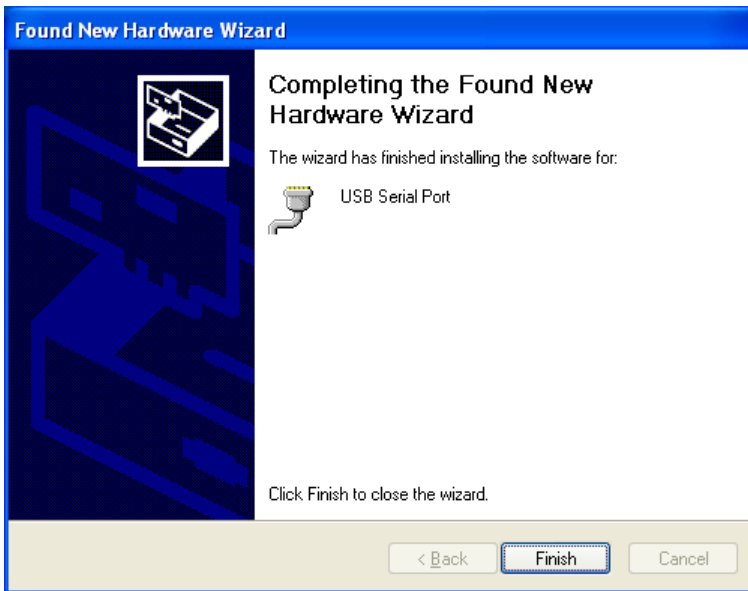
Select "yes, this time only", and click next. The following screen will appear.



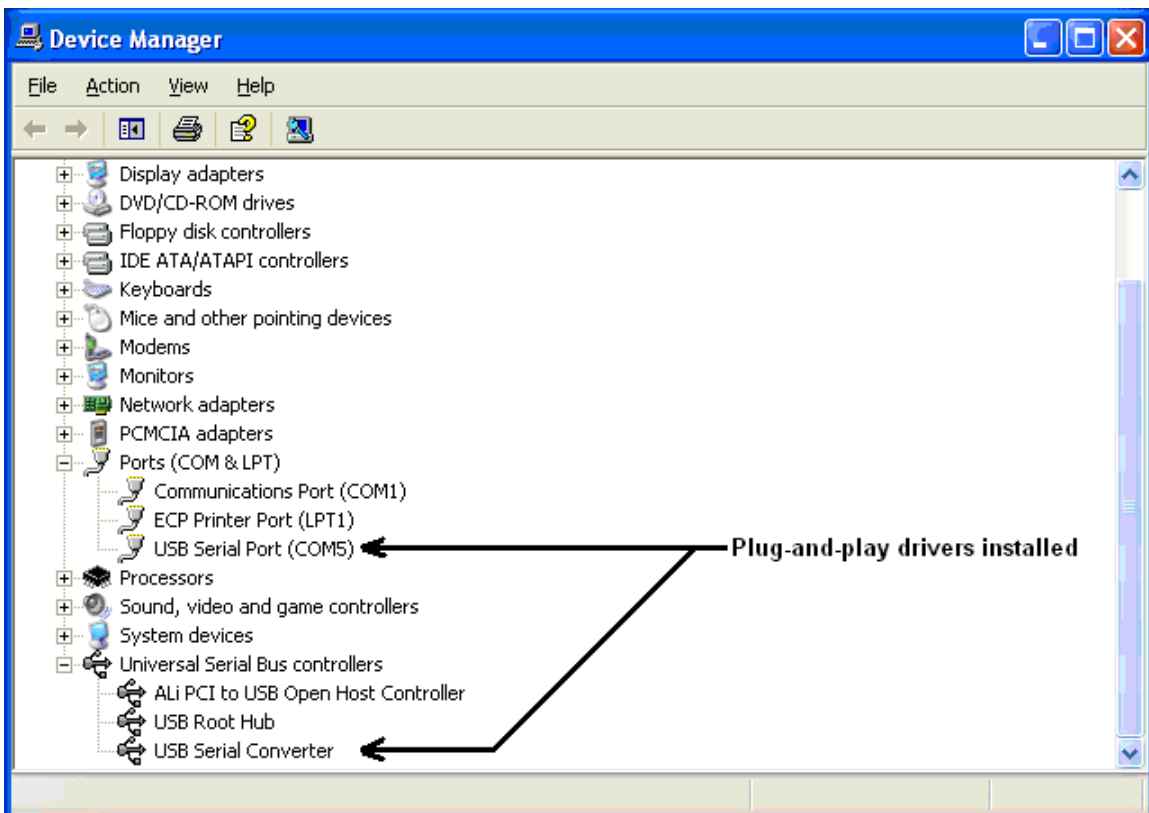
Select “install the software automatically (recommended)”, and click next. The following screen will appear.



Allow Windows to search for the driver and wait for the following screen to appear.

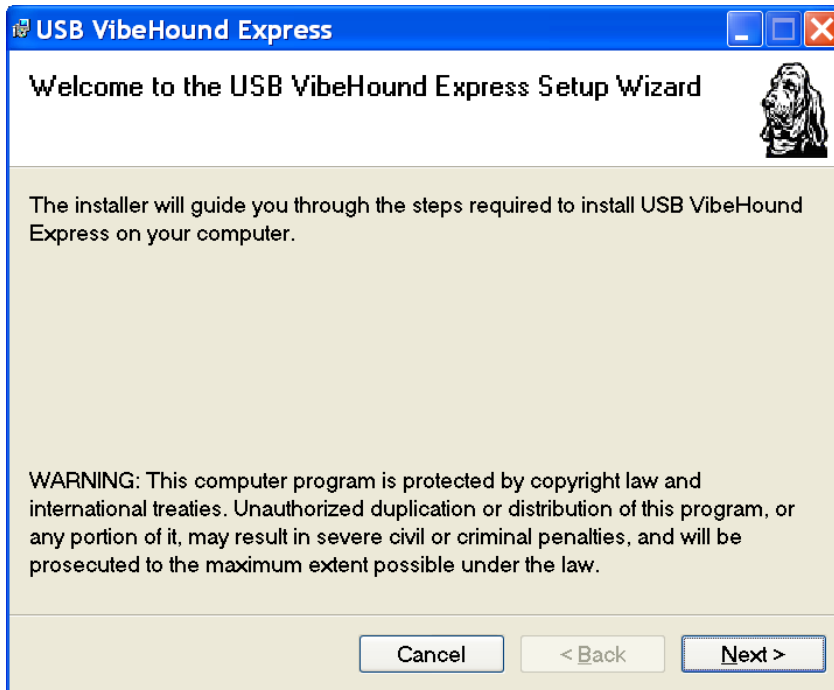


Click finish. The plug-and-play drivers are now fully installed. The Windows device manager will show a USB Serial Converter, and a USB serial Port (COMx).

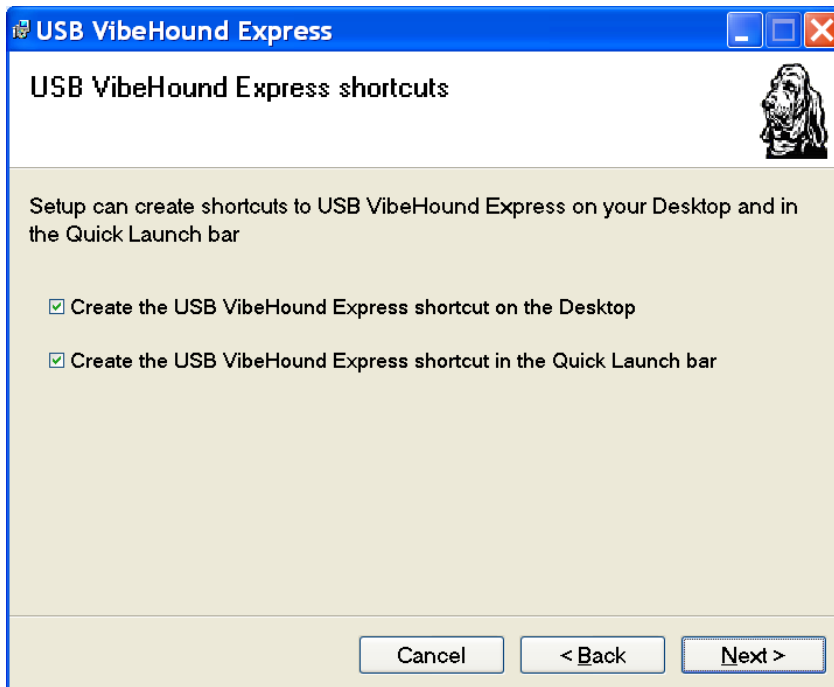


1.2 CD Installation

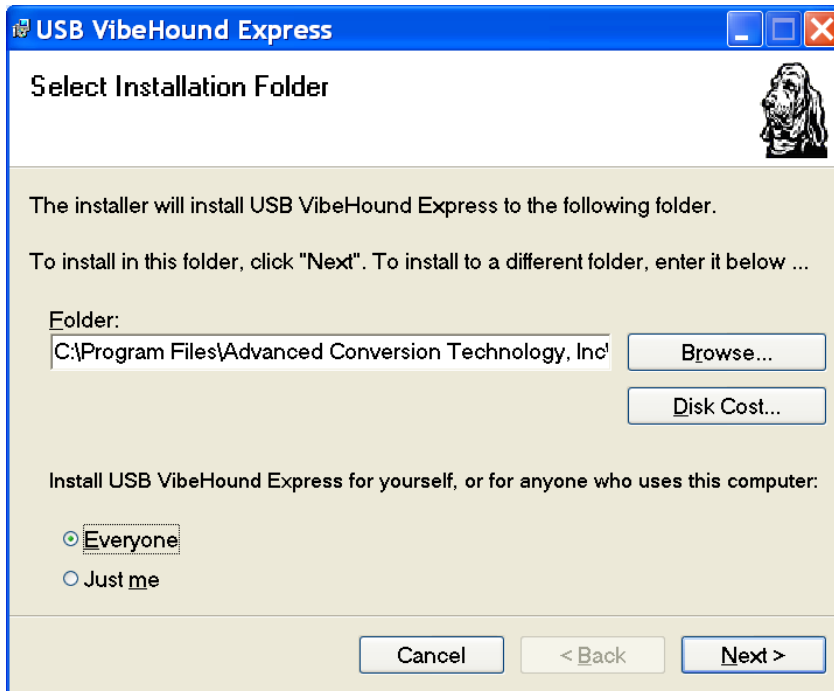
Insert the CD, and wait for the following dialog to appear.



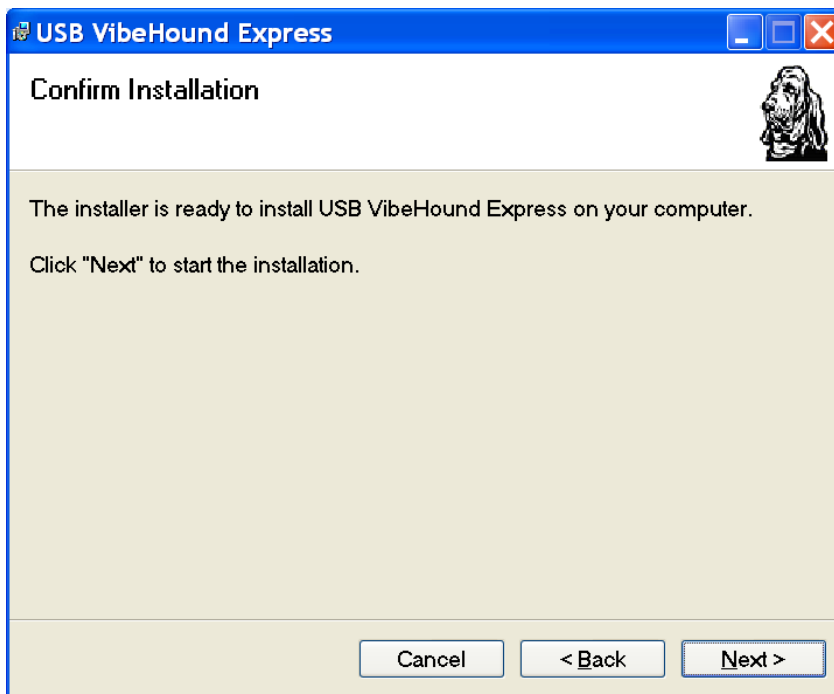
Click next, and the following dialog will appear.



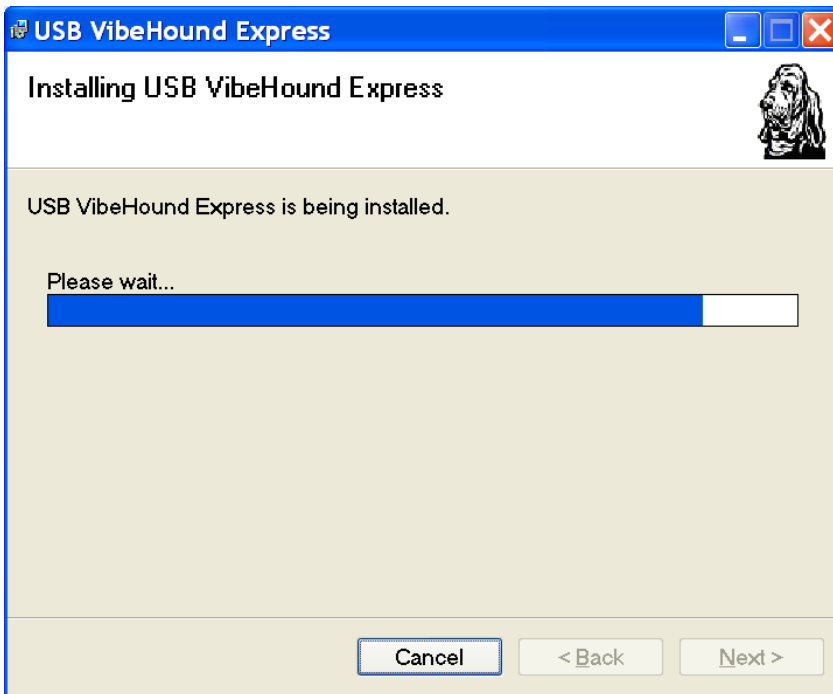
Change shortcut options if you like, and click next. The following dialog will appear.



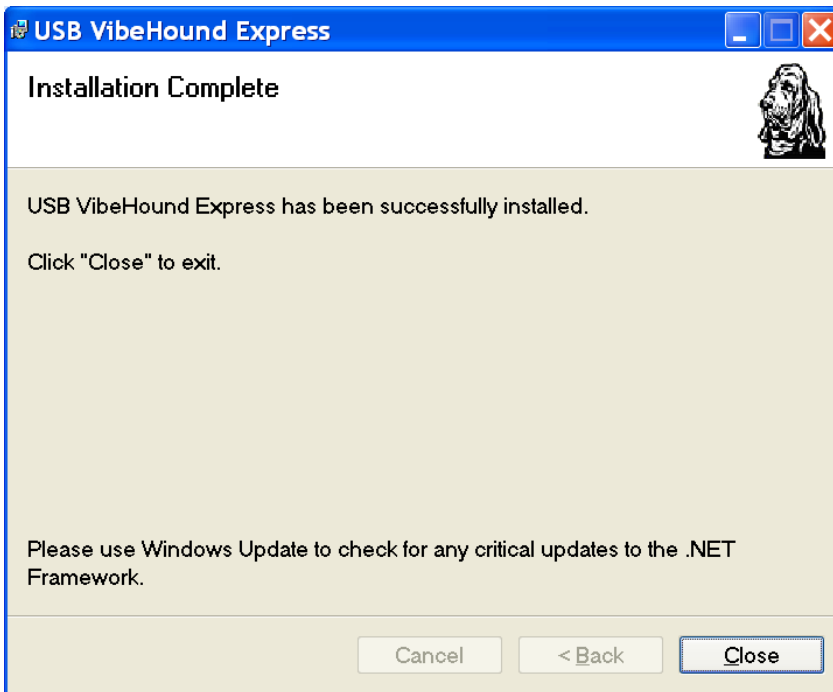
Click next. The following dialog will appear.



Click next. The following dialog will appear.



Wait while the USB VibeHound™ Express software is installed. The following dialog will appear.

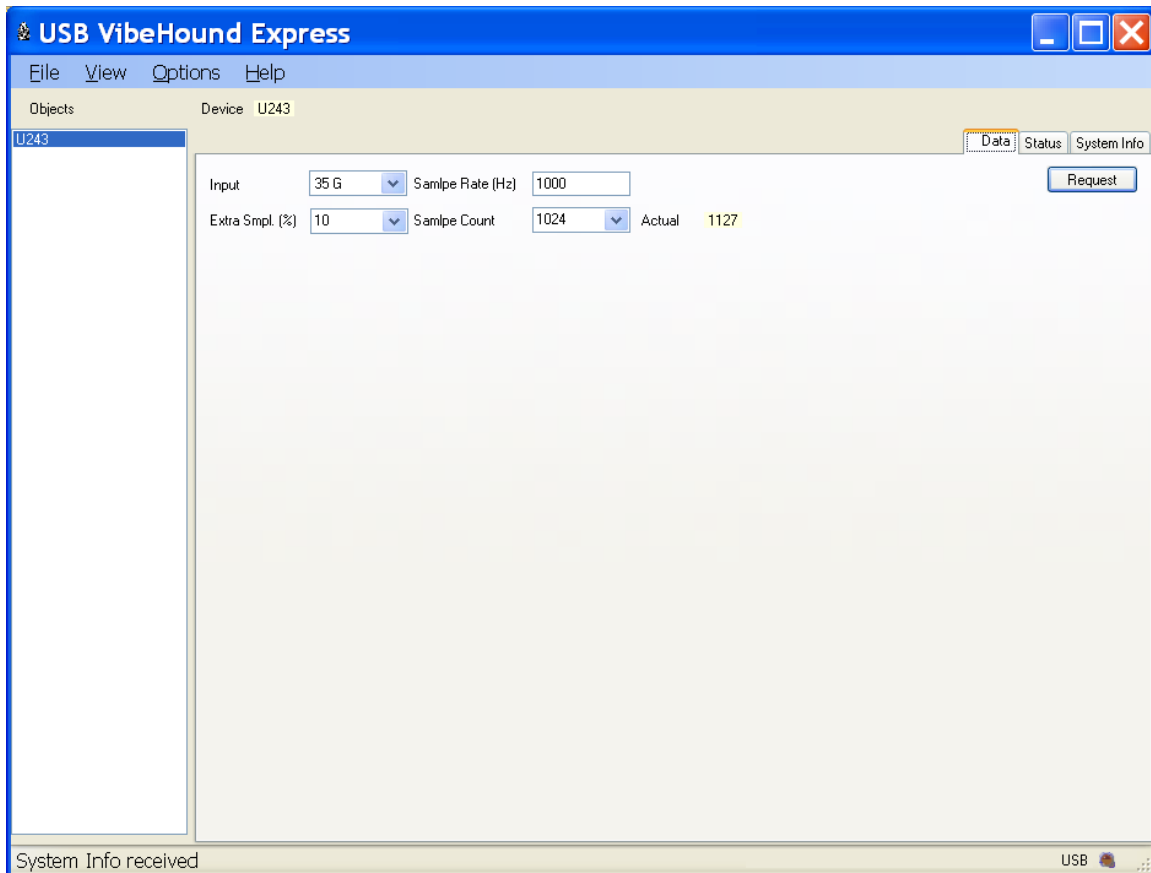


Click Close button. The installation installs Program Group USB VibeHound Express with the shortcut to the USB VibeHound Express (and a desktop icon for the USB VibeHound Express, if this option was selected) which can be used to launch the application.

SECTION II, USB VibeHound™ Express Software Operation

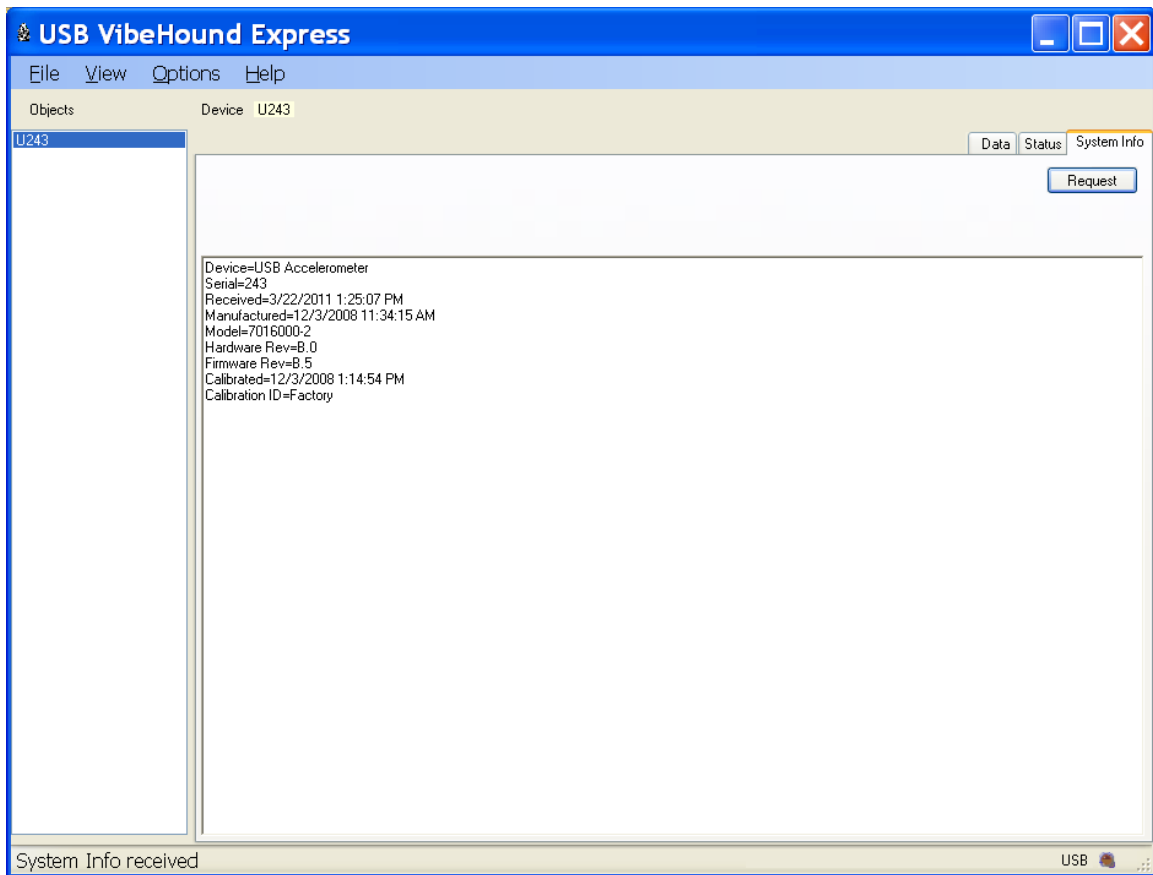
2.1 Introduction

The USB VibeHound™ Express software application can be launched from the Windows desktop by clicking on the USB VibeHound™ Express icon or from Start Menu. Plug in USB Data Logger, and launch the application. The following screen should appear.

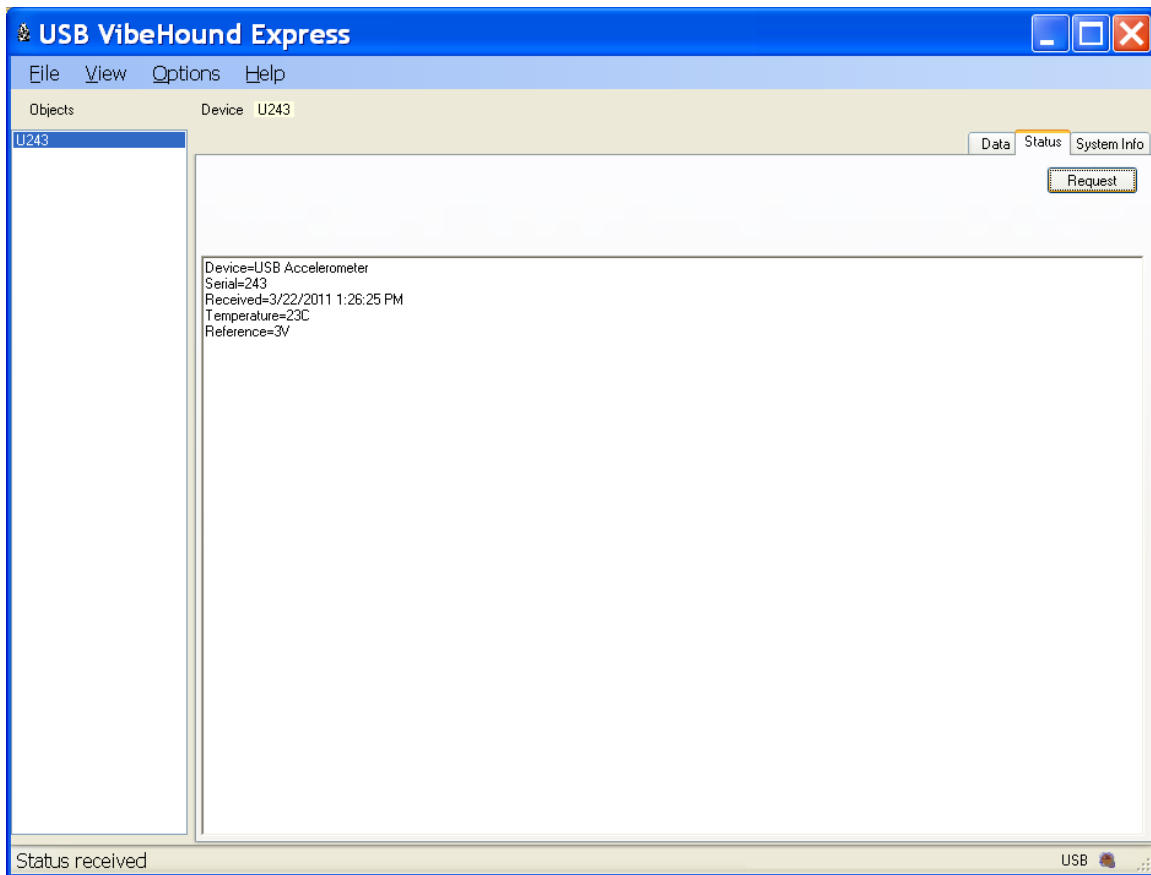


USB Data Logger 7016000-1 should be detected and its serial number appears in the objects list in the left side of the application window.

Click on the System Info tab and verify system information.

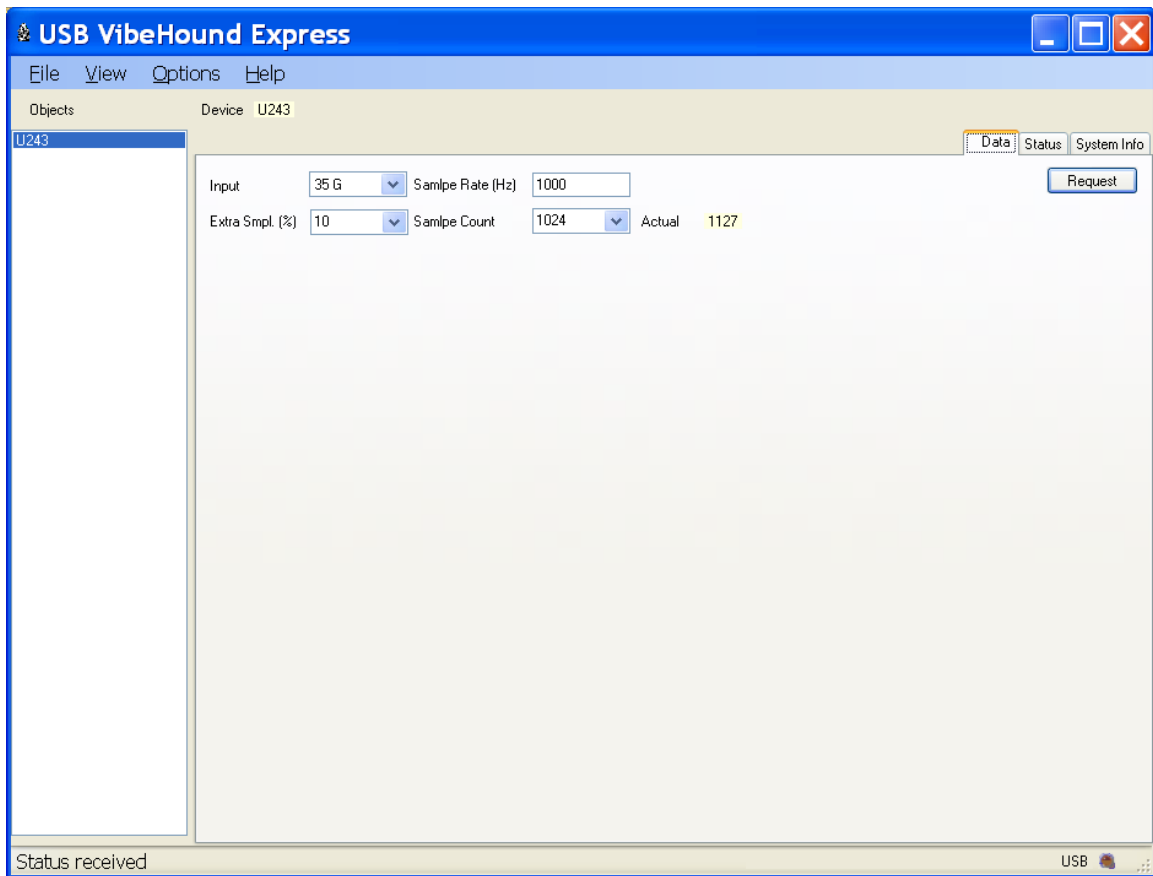


Select Status tab and click Request button

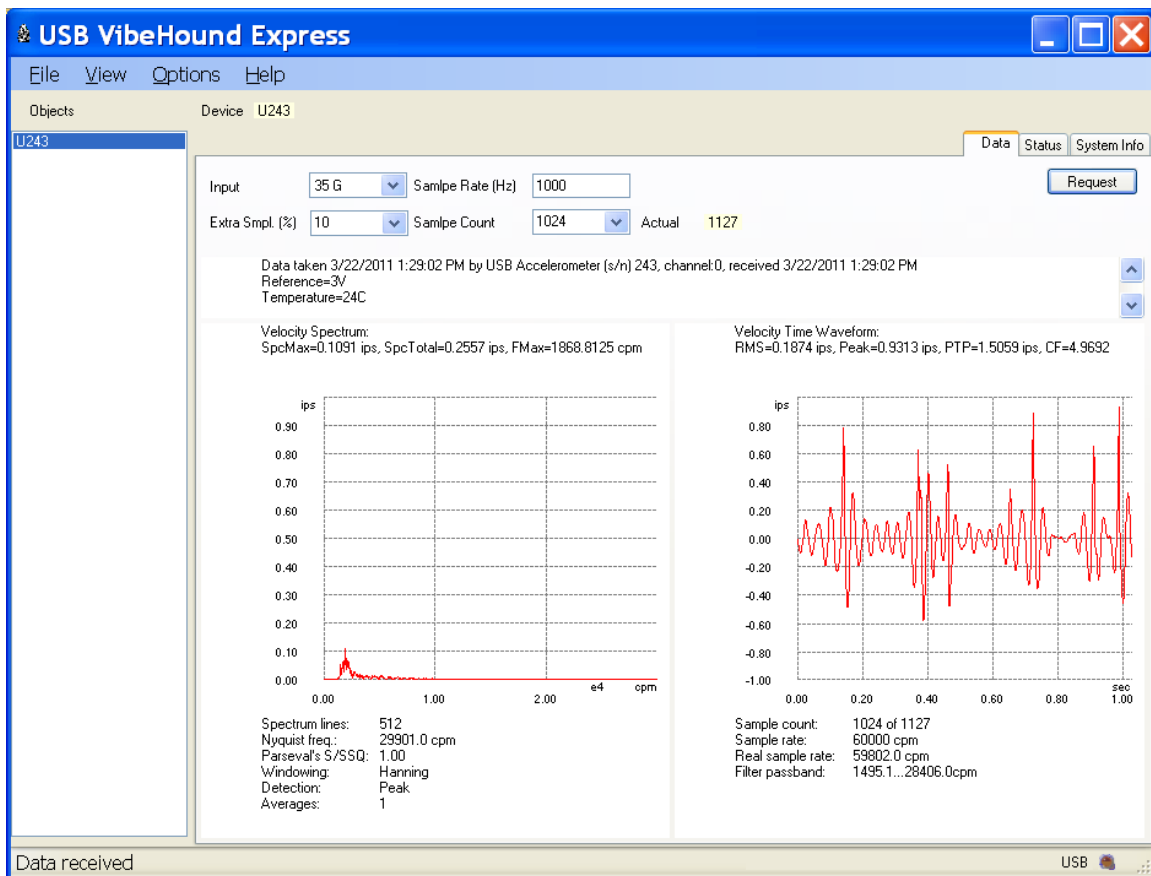


Verify accelerometer status.

Select Data tab and verify sampling information. Press Request button. Data sampling should be started. You can use your fingers to tap the accelerometer until sampling is done



After data transfer, the spectrum and waveform appears.



Data will be displayed as spectrum and time waveform in engineering units.

The spectral data can now be manipulated in several ways. Right mouse click on the spectrum and sub menu will appear.

- Digital filters (post sampling) can be modified from **Options->Data Processing->Low (High) Filter** menu items.
- Data can be integrated (acceleration, velocity, displacement conversion). If improperly filtered, integrated waveforms will show considerable integration errors due to DC offsets). The extra sampling or/and high pass filter can be used to eliminate these. Extra Sampling can be modified from **Options->Data Processing->Extra Sampling** menu item.
- Frequency units and data units can be changed (right click for context menu).
- Scale can be changed from automatic to fixed scales. Data can also be zoomed in on by drawing a box around the desired data with the mouse. Double clicking in the data display returns to the original scale.
- Windowing can be changed (Hanning, Welch, Flat top, etc).
- Spectrum averages can be changed. The maximum lines available for the FFT display is mathematically related to the sample count. The maximum lines available will always be half of the sample count rounded down to the

nearest power of 2. So 2048 samples is the minimum samples count for 1024 line display.

- Copy spectrum plots to the clipboard.
- Print spectrum plots to a printer
- Export data to files for use by third party software packages (Excel, Matlab, etc.)

The time waveform data can be manipulated in several ways. Right mouse click on the time waveform and sub menu will appear.

- Digital filters (post sampling) can be modified from **Options->Data Processing->Low (High) Filter** menu items.
- Data can be integrated (acceleration, velocity, displacement conversion). If improperly filtered, integrated waveforms will show considerable integration errors due to DC offsets). The extra sampling or/and high pass filter can be used to eliminate these. Extra Sampling can be modified from **Options->Data Processing->Extra Sampling** menu item.
- Time units and data units can be changed (right click for context menu).
- Scale can be changed from automatic to fixed scales. Data can also be zoomed in on by drawing a box around the desired data with the mouse. Double clicking in the data display returns to the original scale.
- Copy data plots to the clipboard.
- Print data plots to a printer
- Export data to files for use by third party software packages (Excel, Matlab, etc.)

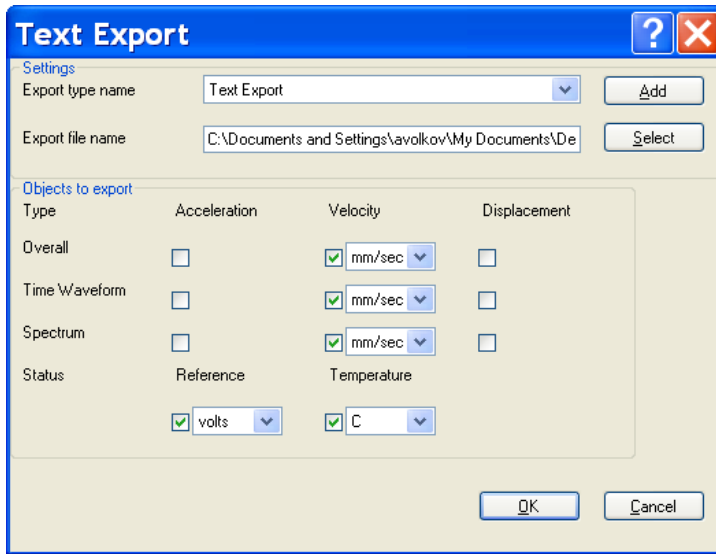
SECTION III, Exporting Data to Third Party Applications

3.1 Introduction

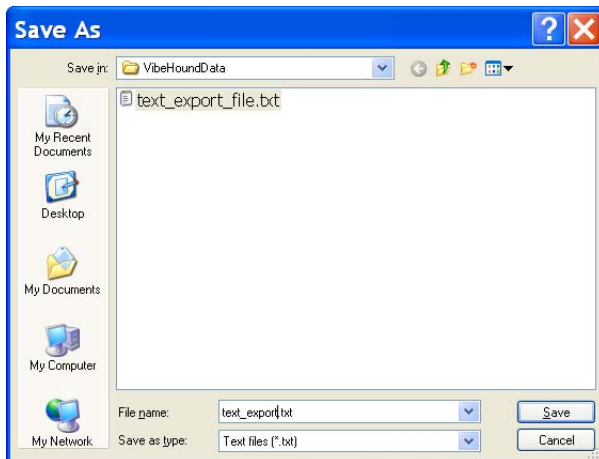
An export function is available to create data files which may be imported into third party software packages (Excel, Matlab, etc)

3.1.1 Manual Export

By selecting **Export** from the **File** menu the following screen pops up. It is from this screen that a user configures where to send the data.



Select **Text Export** from the pull down menu and hit the **Select** button to choose the target file. A file explorer will appear as shown below. Enter the desired file name, path, and click “save”



Next, select what you wish to export. Data can be exported as acceleration, velocity, and/or displacement. And the data can be exported as an overall number (RMS), time waveform (Data), and/or FFT (spectrum). Choose the appropriate items to export and click OK to export. A **tab** delimited text file will be created. An export file generated with the settings below.

Looks like this when opened

```

Data taken Fri Apr 23 15:21:52 2010 by device (s/n) 950, channel:0, received Fr
Reference=3.56V
Temperature=25C
Raw acceleration RMS=0.118601

Sample Rate (Hz): 1000
Sample Count: 2276
Real Sample Rate (Hz): 1002.859253
Spectrum Lines: 1024
Mag(mm/sec)      Time(mm/sec)      Spec(mm/sec)      Mag(volts)      Mag(C)
0.527089420646982  -0.0148581332528479  0.0179122624973815  0  0
0.102060821324859  0.0113604112733774  0.00250503758483394  0.000639136716289311  0.000547024503138276
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0.130528128342976  0.0016097018146575  0.0016097018146575  0.0016097018146575  0.0016097018146575

```

The column of data is the individual samples of data. Only amplitude is given, the corresponding times can be computed from the initial time stamp, and the sample rate.