Software Help Utility

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VB300 3-Axis G-Force Datalogger
Version 1.0 November 2010

Software Introduction

The datalogger software is a program that collects data from the VB300 Datalogger when it is connected to a desktop or notebook PC. The data can be displayed graphically in Microsoft Excel ™ format or in similar programs. The major functions are listed in the main window.

Supported Operating Systems:
Windows™ XP
Windows ™ 7 32 bit and 64 bit
Windows ™ Vista

Minimum Hardware Required:
Desktop or Notebook PC with Pentium 90MHz or better
32 MB RAM
7 MB hard disk space
Display resolution of 1280 x 1024 with 16 bit Color

Installing Datalogger Software and USB Driver

Insert the supplied CD into the PC CD-ROM drive, the CD will automatically run the SETUPGUIDE.EXE that will prompt the user through the installation.

When the SETUPGUIDE.EXE program automatically launches, the following the screen will appear. Follow all of the screen prompts until the software is installed.
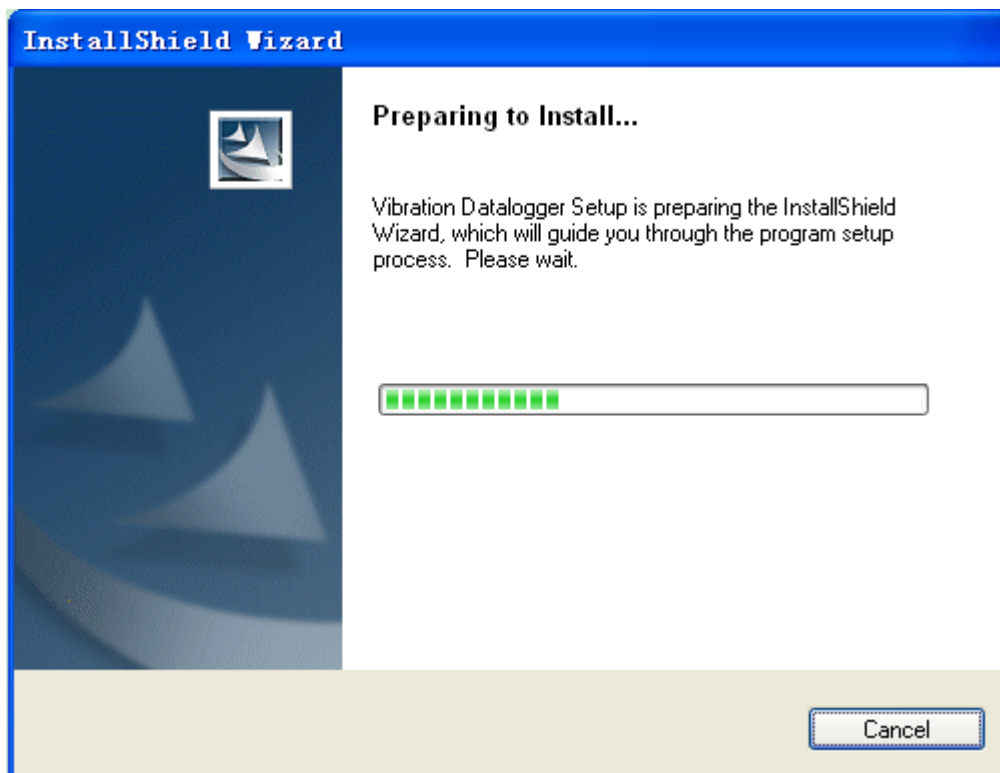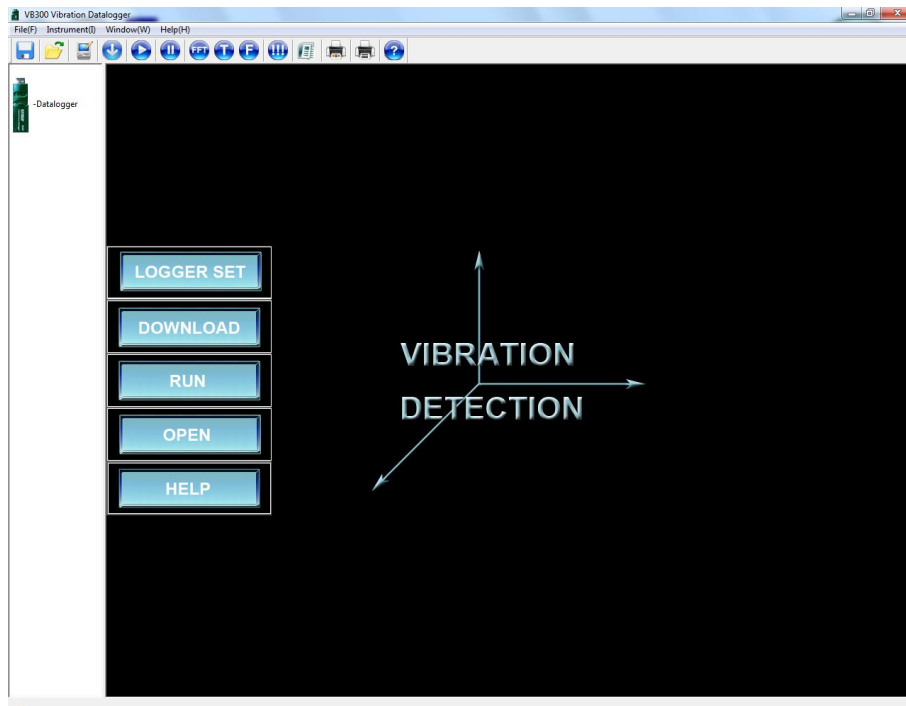
The USB Driver installation window will then appear:

Click "Install" to finish the driver installation

When the Software and Drivers are successfully installed plug the VB300 into the PC USB port and double click the datalogger program icon to run the datalogger software. A screen similar to the one provided below will appear:

The five large buttons on the left side of the software screen can be used to configure the datalogger (Logger Set), transfer data from the datalogger to the PC (Download), record real-time data (Run), open a file (Open), or view the help utility or software version (Help). These functions are also available on the window's menu items and smaller control icons at the top of the window. These menus and icons are explained in detail below.

Main Menu

- **File**

Save	Save the recorded data to the PC hard drive
Open	Open a saved file
Print Setup	Edit the printing options
Print Preview	Preview the Graph or List
Print	Print the Graph or List
Exit	Close the software program

- **Instrument**

Datalogger Setup	Configure the Datalogger Sampling Rate, Motion Detection Threshold, LED, and Record Mode
Download Data	Transfer the data from the Datalogger to the PC
Run	Begin reading the real-time data from the Datalogger
Stop Reading	Stop reading the data from the Datalogger
Reading for FFT Analysis	Read real-time spectral data for FFT analysis
Reload Current File	Check the data from the last measurement

  Note: After downloading data to the PC, the software will save the current data to the PC automatically and replace the old data. Therefore, by clicking the "Reload Current File" only the last data loaded will be retrieved.

- **Window**

  Instrument   Display or hide the instrument window
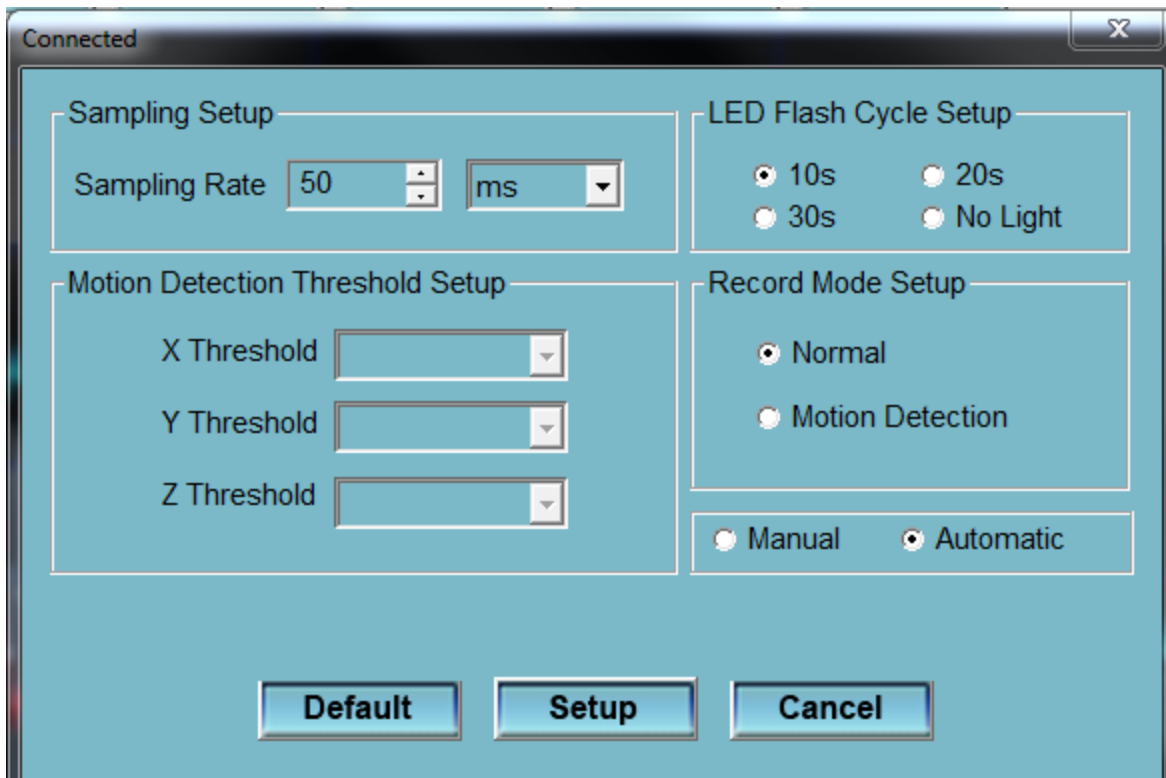 **Data Summary**   Display or hide the Data Summary window

- **Help**

  About   Displays the software's version information
  Help Topics   Opens the software HELP Utility

Operation

Datalogger Setup

Click the setup icon ![setup icon] on the menu bar. The Setup window will appear as shown below; descriptions for each field in the Setup window are listed directly below:

- **Sampling Setup:** Set the Datalogger to record readings at a specific rate. Rate and units are selectable.
- **LED Flash Cycle Setup:** Set to No Light, 10, 20, or 30 seconds. By selecting the "No Light" option, the LEDs will not flash, thereby conserving the battery life.
- **Record Mode Setup:** can be set to Normal or Motion Detection.
- **Motion Detection Threshold Setup:** Sets the acceleration detection threshold when Motion Detection is enabled. If the acceleration value exceeds the threshold, the Datalogger will record the event.

- **Manual or Automatic Start**: Select Automatic to start datalogging immediately when the Setup window is exited or Manual by using the datalogger button at a later time.
- Click the SETUP button to save changes. Click the DEFAULT button to set the Datalogger to its factory default condition. Click the CANCEL button to abort the setup.

Notes: All stored data will be permanently erased when Setup is clicked. To save data, click Cancel and download the data first and then re-enter the Setup mode.

The battery could expire before a logging session is finished recording a specified number or sample points. Ensure that the available battery power is sufficient for completing a given logging task. If in doubt, install a fresh battery before logging critical data.
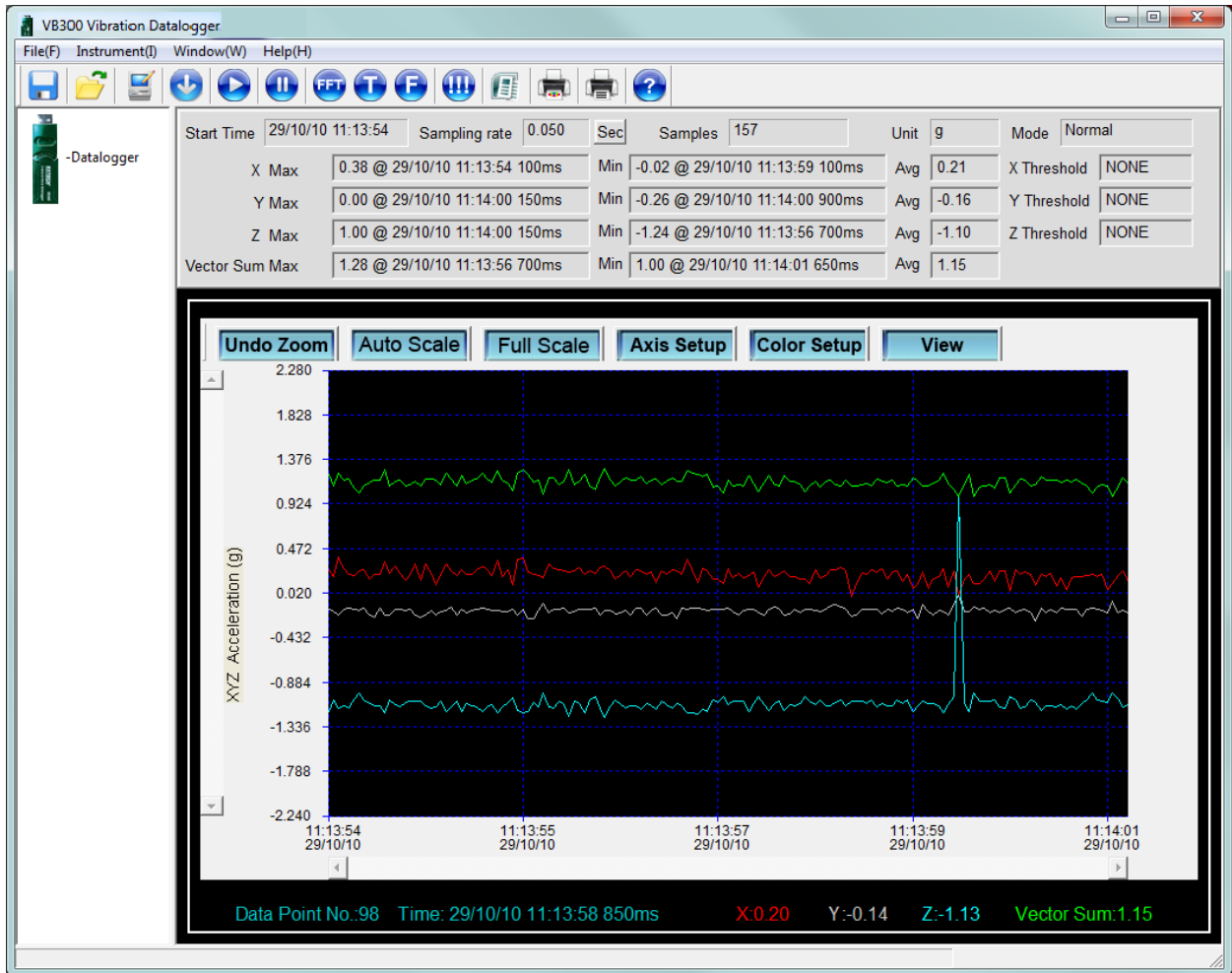
Download Data

To transfer the readings stored in the Logger to the PC:
    A. Connect the Datalogger to the USB port.
    B. Open the Datalogger software program if it is not still running
    C. Click the Download icon.
    D. The window shown below will appear. Click DOWNLOAD to begin transferring data.

Not Connected

Connecting failed. Ensure logger inserted and try again.
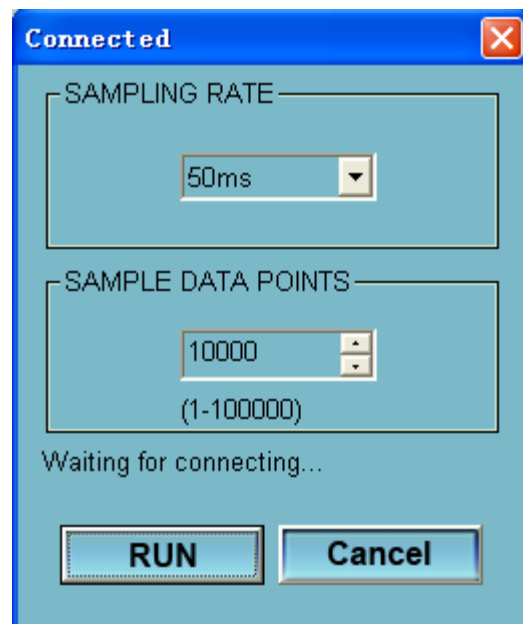
| Download | Cancel |
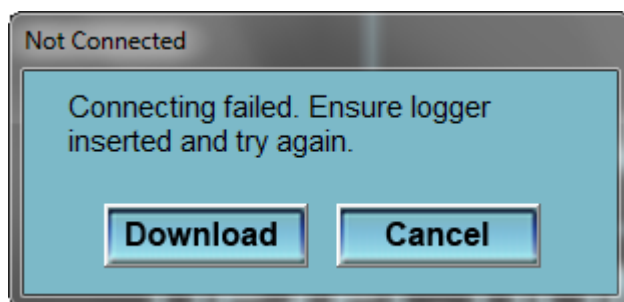
Once the data is successfully downloaded, the window shown below will appear.

Run

Click the run icon to read real-time data from the Datalogger. Click to pause the recording.

First, configure the sampling rate and sample data point allotment, and then click RUN to begin reading data.

Reading for FFT Analysis

Click ![FFT icon] icon to read real-time spectral data for FFT analysis.

Click ![T icon] to show the time-domain graph. The graph will appear as shown below:

Click ![F button] to show the frequency-domain graph.

The software computes real-time spectral data using FFT from 0 to 256 HZ.

The frequency of the maximum magnitude will be listed on this panel.

Graph menu:
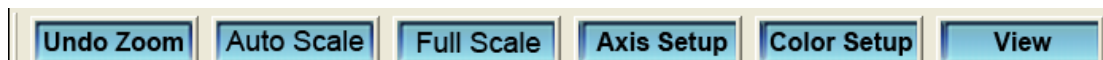
Zoom in:
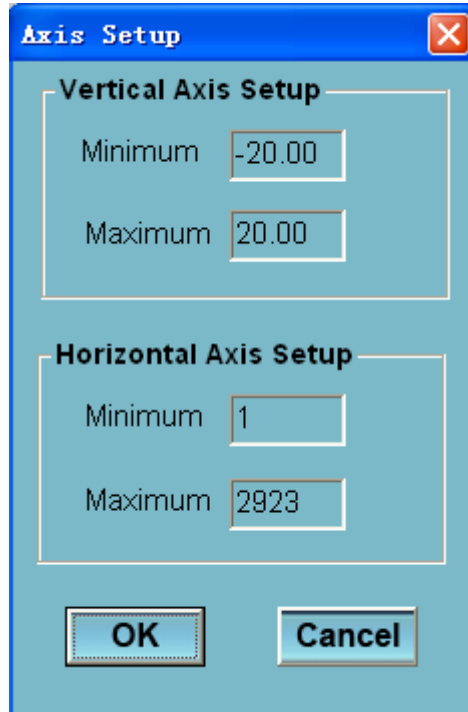
    1. Click the left mouse button and drag a rectangle around the area to be expanded.
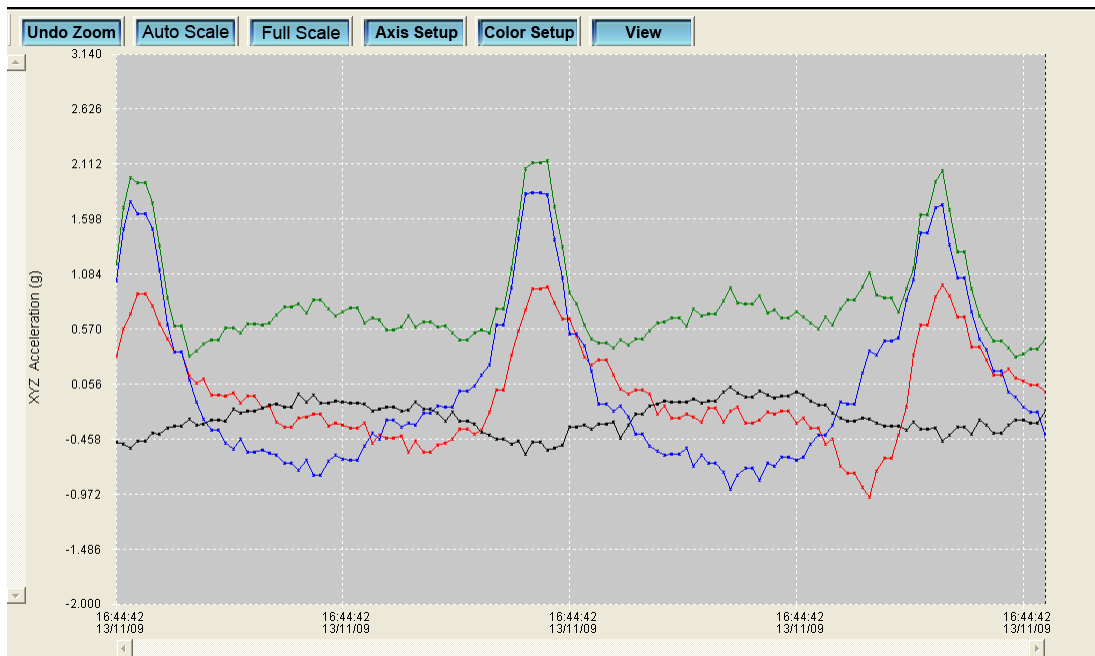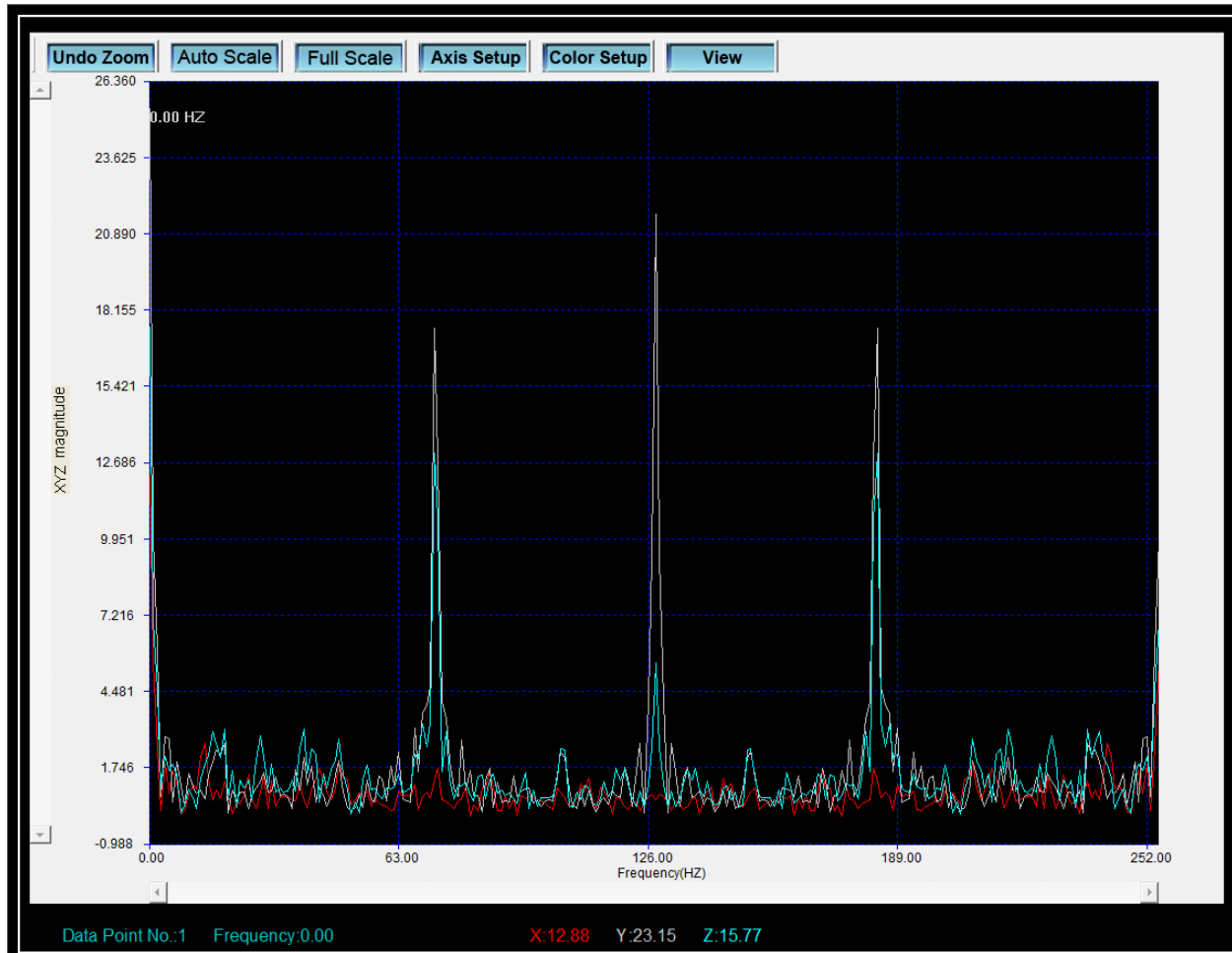
    2. Release the mouse button.

    3. In zoom mode, use the vertical and horizontal scroll bars to navigate the graph.

Undo Zoom : Click to return to full view.

Auto Scale : Set the scale to reflect on-screen values.

Full Scale : Set the scale to the Max and Min value.

Axis Setup Set Maximum and Minimum vertical & horizontal axis values.

Axis Setup

Vertical Axis Setup

    Minimum -20.00

    Maximum 20.00

Horizontal Axis Setup

    Minimum 1

    Maximum 2923

OK   Cancel

Color Setup : Set the color for Background, Grid Axis, X/Y/Z values, and Vector Sum.
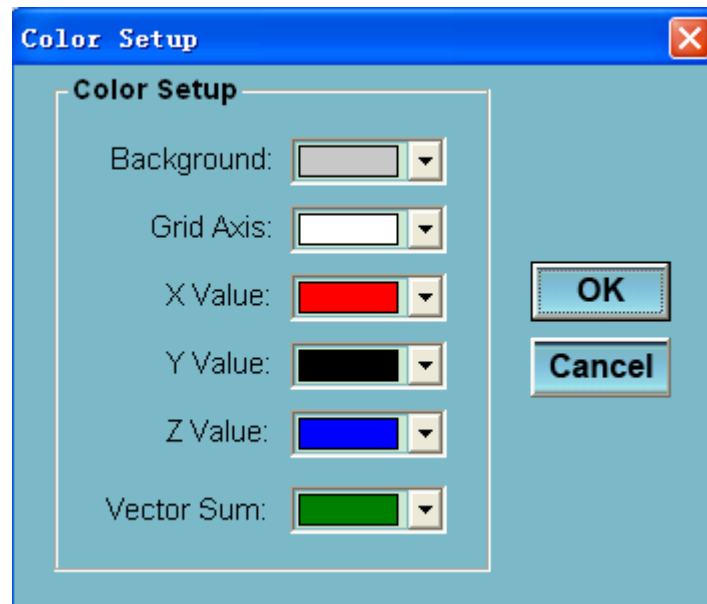
View : Click to select the parameters and Axis to be displayed
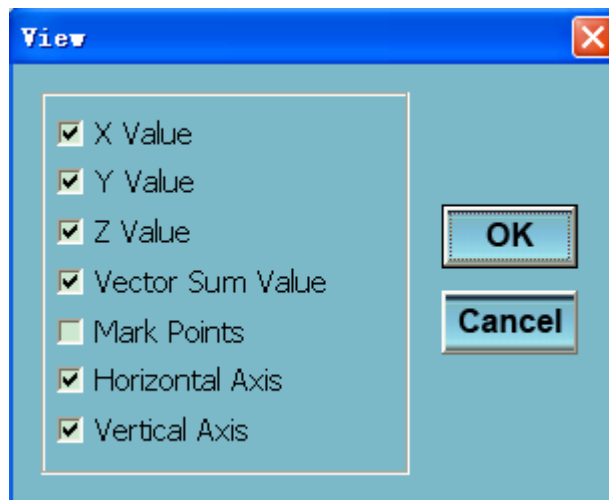
The field at the bottom of the graph window will display the Data Point Number, Time, and X/Y/Z/Vector Sum value at the cursor location.

Data summary:

Start Time	20/10/09 16:14:50	Sampling rate	0.05	Sec	Samples	2923		Unit	g		Mode	Normal
X Max	0.00 @ 20/10/09 16:17:16 100ms	Min	0.00 @ 20/10/09 16:17:16 100ms		Avg	0.00		X Threshold	NONE			
Y Max	0.81 @ 20/10/09 16:16:44 400ms	Min	-1.25 @ 20/10/09 16:16:45		Avg	-0.04		Y Threshold	NONE			
Z Max	0.02 @ 20/10/09 16:16:46 450ms	Min	-5.76 @ 20/10/09 16:16:46 400ms		Avg	-0.20		Z Threshold	NONE			
Vector Sum Max	5.76 @ 20/10/09 16:16:46 400ms	Min	0.00 @ 20/10/09 16:14:50		Avg	0.21						

Data List

Click the list icon to import data to the list format.

No.	Time	X Value	Y Value	Z Value	Vector Sum	Unit
1	20/10/09 16:14:50	0.00	0.00	0.00	0.00	g
2	20/10/09 16:14:50 50ms	0.00	-0.06	-0.14	0.15	g
3	20/10/09 16:14:50 100ms	0.00	-0.06	-0.14	0.15	g
4	20/10/09 16:14:50 150ms	0.00	-0.10	-0.18	0.21	g
5	20/10/09 16:14:50 200ms	0.00	-0.15	-0.13	0.19	g
6	20/10/09 16:14:50 250ms	0.00	-0.10	-0.14	0.17	g
7	20/10/09 16:14:50 300ms	0.00	-0.06	-0.23	0.24	g
8	20/10/09 16:14:50 350ms	0.00	-0.06	-0.15	0.16	g
9	20/10/09 16:14:50 400ms	0.00	-0.06	-0.11	0.12	g
10	20/10/09 16:14:50 450ms	0.00	-0.12	-0.15	0.20	g
11	20/10/09 16:14:50 500ms	0.00	-0.08	-0.10	0.13	g
12	20/10/09 16:14:50 550ms	0.00	-0.10	-0.16	0.19	g
13	20/10/09 16:14:50 600ms	0.00	-0.07	-0.11	0.13	g
14	20/10/09 16:14:50 650ms	0.00	-0.02	-0.20	0.20	g
15	20/10/09 16:14:50 700ms	0.00	-0.08	-0.13	0.15	g
16	20/10/09 16:14:50 750ms	0.00	-0.03	-0.18	0.19	g
17	20/10/09 16:14:50 800ms	0.00	-0.07	-0.06	0.10	g
18	20/10/09 16:14:50 850ms	0.00	-0.09	-0.16	0.18	g
19	20/10/09 16:14:50 900ms	0.00	-0.04	-0.11	0.12	g
20	20/10/09 16:14:50 950ms	0.00	-0.04	-0.16	0.16	g
21	20/10/09 16:14:51	0.00	-0.08	-0.08	0.11	g
22	20/10/09 16:14:51 50ms	0.00	-0.09	-0.11	0.14	g
23	20/10/09 16:14:51 100ms	0.00	-0.08	-0.15	0.17	g
24	20/10/09 16:14:51 150ms	0.00	-0.02	-0.16	0.16	g
25	20/10/09 16:14:51 200ms	0.00	-0.07	-0.11	0.14	g
26	20/10/09 16:14:51 250ms	0.00	-0.05	-0.14	0.15	g
27	20/10/09 16:14:51 300ms	0.00	-0.08	-0.10	0.12	g
28	20/10/09 16:14:51 350ms	0.00	-0.03	-0.10	0.11	g

Note that the time and date are shown in the time-domain mode

No.	Frequency(HZ)	X Value	Y Value	Z Value		
1	0.00	7.24	43.37	13.31		
2	1.00	10.83	15.95	14.60		
3	2.00	0.77	10.81	11.76		
4	3.00	13.42	3.97	18.92		
5	4.00	23.11	4.29	37.50		
6	5.00	38.37	17.77	75.28		
7	6.00	13.18	6.04	27.54		
8	7.00	17.51	6.02	29.53		
9	8.00	19.38	1.69	15.47		
10	9.00	14.98	3.22	25.87		
11	10.00	18.78	3.19	24.37		
12	11.00	10.33	3.08	8.33		
13	12.00	15.52	1.44	10.53		
14	13.00	13.36	3.14	14.22		
15	14.00	13.37	1.71	19.07		
16	15.00	4.66	2.57	13.88		
17	16.00	2.78	2.27	2.81		
18	17.00	7.87	0.89	7.39		
19	18.00	5.57	0.73	9.52		
20	19.00	11.25	2.69	13.13		
21	20.00	1.96	0.60	4.14		
22	21.00	1.97	1.15	2.56		
23	22.00	1.81	1.51	1.69		
24	23.00	2.74	1.83	9.10		
25	24.00	5.29	2.12	8.88		
26	25.00	0.76	1.14	2.23		
27	26.00	1.81	0.83	2.17		
28	27.00	1.68	2.02	5.13		
29	28.00	1.61	0.41	3.59		

Note that frequency/magnitude are shown in the frequency-domain mode

File save and open

1. Click the 💾 icon to open the file save dialog box.

2. Name the file and save it using the default extension. The file will be saved with the ". vibration" extension to be reopened in the Vibration Datalogger software program and also as a ".xls" file to be opened in spreadsheet program or other program.
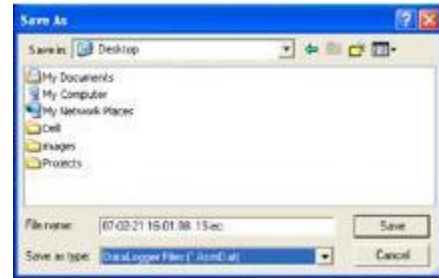
3. Click the 📂 icon to open an existing data file for viewing on the data graph window. When prompted, select a previously saved vibration file to open.

Print icons 🖨️🖨️

Click the Print Graph icon 🖨️ to print the graph.

Click the list icon 📰 to import data to a list and then click the Print List icon 🖨️ to print the list.

Help ❓

Click the Help icon ❓ to to open the Help Utility.