Vibration Research

VR8500

Vibration Control System

QUICK START GUIDE

This guide is intended to help you get started quickly and is not intended to replace your User Manual. For optimal system settings and troubleshooting as well as safety precautions, please refer to the Help file or User Manual.

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VR8500:

Thank you for purchasing a VR8500 vibration control system from Vibration Research Corp. We appreciate your business. Vibration Research Corp. is continually upgrading the features and capabilities of our products. Please visit our website (www.vibrationresearch.com) regularly to download the latest available VibrationVIEW software for your VR8500 controller.

Also, in the event your have questions regarding your system you can either contact the V.R.C. representative from whom your controller was purchased, or contact our product support staff directly at support@vibrationresearch.com or call 616-669-3028 from 8-5 Eastern, Monday-Friday.

SETTING UP THE HARDWARE:

Connecting the *VibrationVIEW* I/O hardware:

1. Set up the computer in the conventional configuration, with power cables, mouse, keyboard, and monitor.
2. Connect the VR8500 network port to the dedicated network card in the computer using the included yellow crossover cable. *If your VR8500 is labeled "Adapter Cable Required", the included red adapter cable and metallic CAT5 in-line coupler MUST be connected between the yellow crossover cable and the network port of the VR8500.*

3. Connect the line cord to the VR8500. The power input will automatically switch for voltage 90-250VAC and 50/60 Hertz.
4. Connect the shaker amplifier's input to the Drive output connector on the rear of the VR8500.
5. Connect an accelerometer to Channel 1 of the VR8500. Other accelerometers can be connected to Channels 2,3 and 4.

Connecting two or more VR8500 units

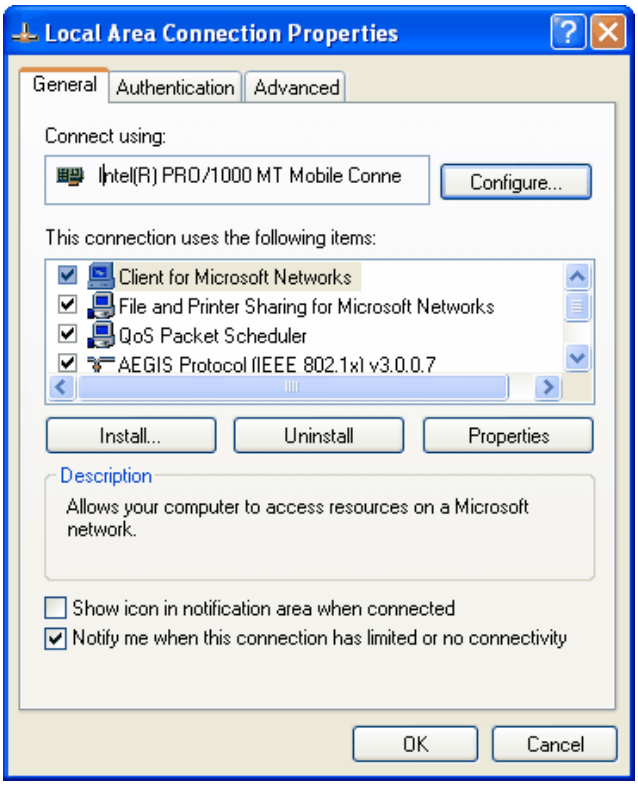
1. Two or more VR8500 units require a network switch.
2. Connect the first VR8500 to port 1 on the switch. Additional VR8500's can be connected to port 2,3, and 4 on the switch. Connect the computer to highest numbered port with the supplied cable.
3. Connect 120 VAC power cords to each of the VR8500's.
4. Connect the shaker amplifier's input to the Drive output connector on the *first* VR8500. For systems controlling two shakers simultaneously, connect the second shaker's amplifier input to the Drive output connector on the *second* VR8500.
5. Connect accelerometer channels 1-4 to channels 1-4 of the first VR8500, accelerometer channels 5-8 to channels 5-8 on the second VR8500, accelerometer channels 9-12 to channels 9-12 on the third VR8500 accelerometer and channels 13-16 to channels 13-16 on the fourth VR8500, etc. up to 32 channels.

ESTABLISHING COMMUNICATION WITH PC:

Configuring the VR8500

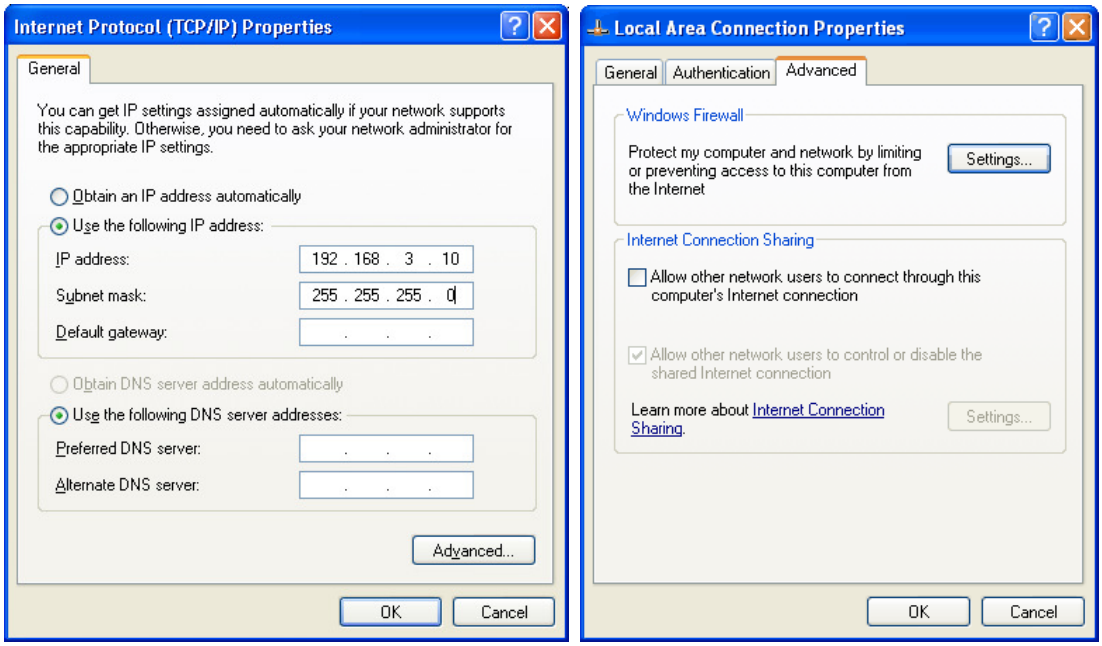
1. Set up the dedicated network card for *VibrationVIEW*. Select the network card dedicated to the VR8500 from the Network Connections applet in Control Panel ("Start --> Settings --> Control Panel --> Network Connections" in Win XP). Your network connection will display the name assigned when the network card was installed, typically "Local Area Connection 2". Double click on the "Local Area Connection 2" and click on the "Properties" button.

2. Remove the check marks from "Client for *Microsoft* Networks", and "File and Printer Sharing for *Microsoft* Networks." Select Internet Protocol (TCP/IP) and click the "Properties" button to continue.

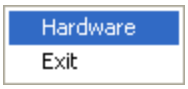


3. Assign address 192.168.3.10 and subnet mask 255.255.255.0 as shown in the Internet Protocol (TCP/IP) Properties dialog box. If multiple network cards are installed in the computer the IP address can be adjusted. Other recommended values are 192.168.2.10 and 192.168.4.10, although any Class C or Class D subnet will work. Click the OK button to return to the previous dialog

4. Click the Advanced tab in the Properties dialog box. Make sure Internet Connection Sharing for this connection is unchecked (NOT enabled).

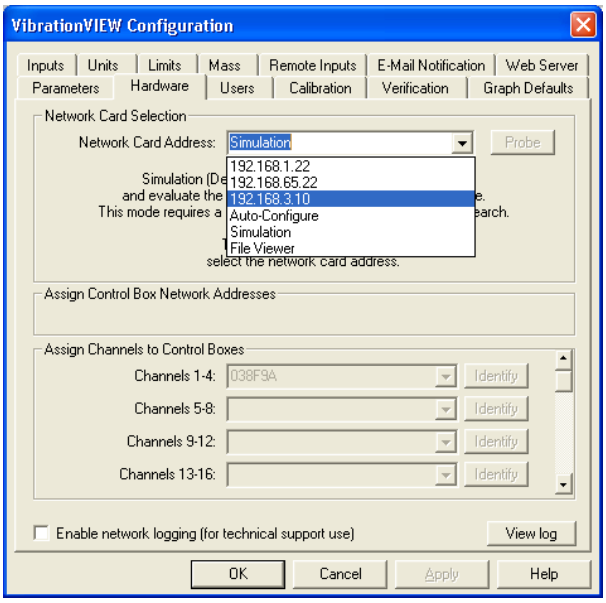


5. *VibrationVIEW* must be configured to use the appropriate network connection after the network is setup. Start *VibrationVIEW* by double-clicking the *VibrationVIEW* icon on the desktop. Select the Configuration..Hardware menu command.



6. Select the network card previously configured. Typically this will be 192.168.3.10. Click the apply button.

7. Your VR8500 serial number will be added to the drop down menu for Channels 1-4 when it initially connects to the computer. Select the appropriate VR8500 serial number to configure channels 1-4 and, optionally, channels 5-8, channels 9-12, and 13 through 32 (in blocks of 4 channels). The VR8500 control boxes are assigned addresses from the range listed in the Control Boxes Address parameters. This does not need to be changed.

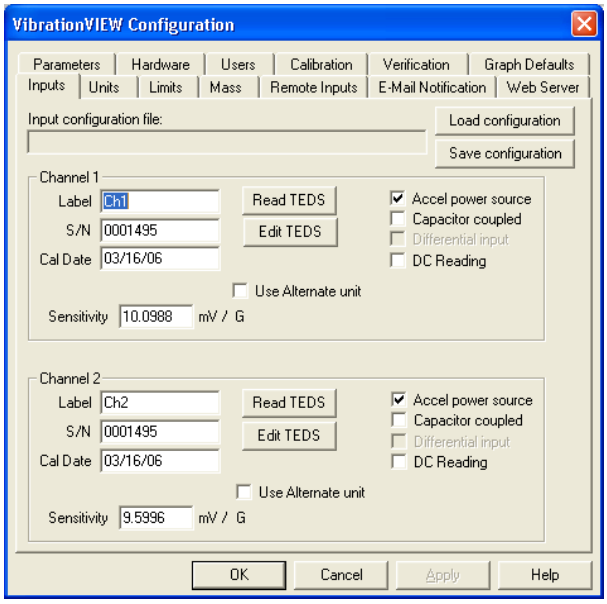


INPUT CONFIGURATION (setting sensitivities for inputs):

The inputs must be configured for each connected accelerometer. Each input can be configured as single ended, differential and optionally capacitor coupled. Single ended inputs can also provide a constant current source to power your accelerometers. Other types of accelerometers such as charge coupled accelerometers require external conditioning. Be sure to enter the proper calibration factor (in mV/g) for each channel.

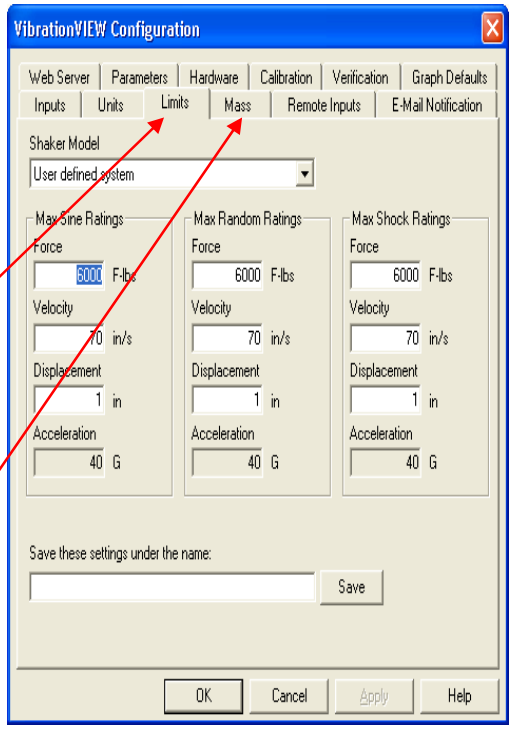
If the connected accelerometer has TEDS (Transducer Electronic Data Sheet) containing the calibration information, simply click the “Read TEDS” button and the information will automatically be entered.

When the appropriate values are entered, click the "OK" button. The new accelerometer sensitivity factors will take effect immediately.



Note: Be sure to check the “Accel power source” box if you want the VR8500 to provide the constant current source to your accel.

SYSTEM LIMITS (shaker limits and moving mass):



The controller checks the system specifications to determine if the shaker is able to perform the current test. The shaker force, velocity and displacement limit values only need to be entered once when the system is first configured. The fixture and product masses that are required to properly compute the acceleration limits of the shaker must be entered every time the fixture or product mass is changed.

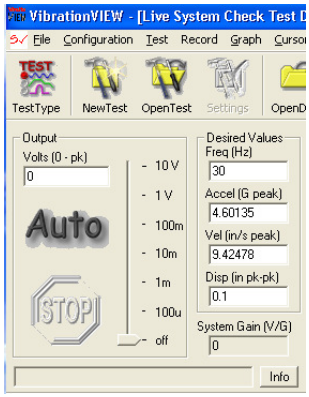
To set the system limits, select the Configuration..System Limits menu command. In the dialog box, select either the system matching your setup or enter the specifications of your system. *These specifications should be listed in the manual for your shaker system.*

To enter the system mass, select the Configuration..System Mass menu command. Enter the masses for all the shaker parts on your system. If your system does not have one of the listed parts, enter zero for that item's mass. The sum of these mass values is used to calculate the maximum operating acceleration for your system using Newton's law:

Force = mass * acceleration

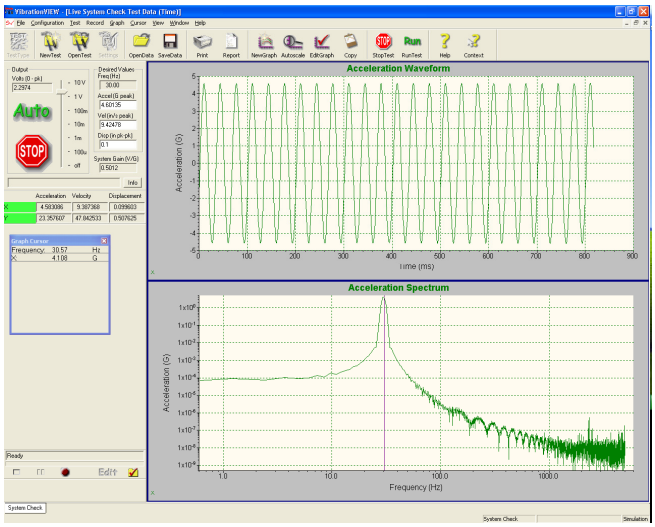
SYSTEM CHECK:

To verify that the input and output levels and frequencies are correct, perform the following procedure:

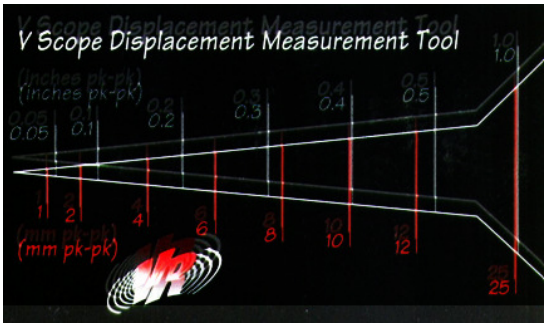


1. Select the Test..System Check menu command to switch the system into System Check mode.
2. Select the Configuration..Inputs menu command. Verify that your accelerometer sensitivity and power source settings are configured appropriately. The constant current source is enabled in this dialog box. If you are using constant current accelerometers or a conditioner that requires a constant current source make sure the "Accel power source" is checked. Click the "OK" button.
3. For **Electro Dynamic shakers,** enter a frequency of 30 Hz and a displacement of 0.1 inches (peak-to-peak) in the System Check Control Center. These are the default values. For **Servo Hydraulic** shakers, set to 20 Hz and 0.05 inches (peak-to-peak).
4. Verify that the input levels are near zero (double right-click on the graph to autoscale).

5. Click the "Auto" button. The output level should slowly ramp up until the shaker approaches a 0.1-inch peak-to-peak displacement (0.05 inches if using the Servo Hydraulic recommended set-up).
6. If the shaker does not move, click the "Stop" button to turn the output off. Verify that the Drive output connector from the VR8500 is connected to the shaker amplifier's input, that the amplifier is turned on and that the amplifier output is connected to the shaker. Return to step 4.



7. If the shaker still does not move, connect the Drive output connector of the VR8500 to an oscilloscope or true RMS voltmeter, set the output voltage level to 0.5 volts (0-to-peak) and verify that you have a 0.5 volt (0-to-peak) amplitude reading (0.35 volts RMS). If the Drive output connector is not measuring 0.35 volts RMS, your system may require calibration.
8. If the shaker vibrates, but the input waveform remains flat, click the "Auto" button a second time so that the text on the "Auto" button is dark and the output stops ramping up. Check the accelerometer cables to verify that they have good connections and that the accelerometer conditioning equipment is turned on. If you are using the internal current source to power the accelerometer, verify that "Accel power source" on Configuration..Inputs dialog box is checked. If there still is no input signal, connect the conditioned accelerometer signal to an oscilloscope or voltmeter and verify that you see a voltage reading. If there is no reading, click the "Stop" button to turn the output off, replace the accelerometer cable, accelerometer and/or the accelerometer conditioning equipment with devices known to be working and return to step 4. Note: most problems are due to bad cable connections.

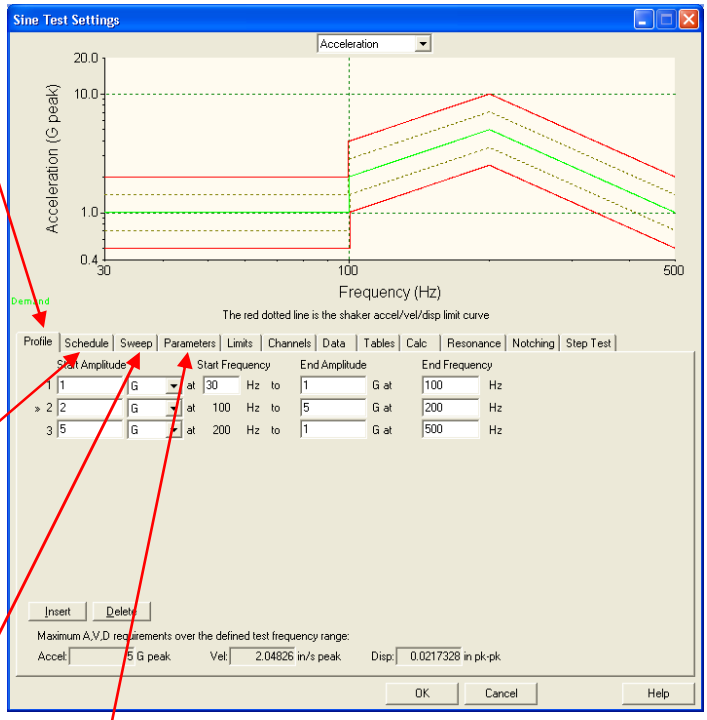


9. Once you get both an output and an input signal, use a displacement measurement tool to verify that the shaker peak-to-peak displacement matches the value shown in the System Check Control Center. If it does not match, select the Configuration..Inputs menu command to verify that the accelerometer sensitivity settings match the calibrated values for the accelerometers you are using.

Note: To use the V Scope Displacement Measurement Tool – tape or hold firmly on shaker head so that it moves in the direction of vibration (see arrows). The lines will blur and intersect at the 0.1 inch mark on the measurement tool if the shaker is moving as directed above (0.05 for the servo hydraulic set-up). If the lines don't intersect there, check that your accelerometer sensitivities are set correctly (and power source on, if required).

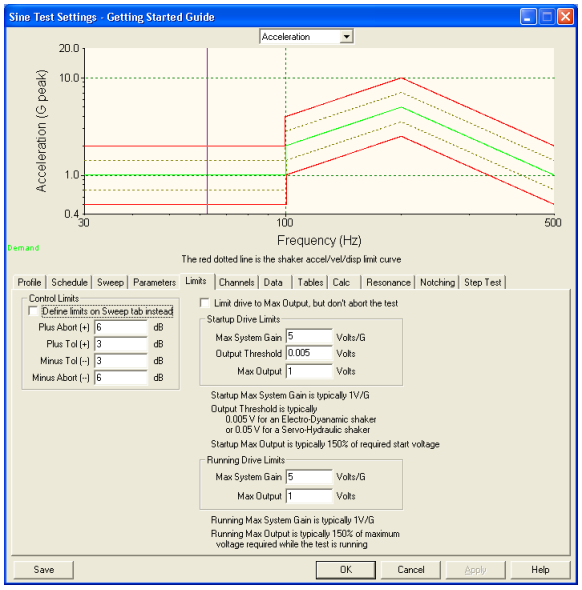
SineVIEW TEST SET-UP:

Click the New Test button and select "Sine" to begin defining a new Sine test. This will guide you through the following series of configuration dialog boxes. Default values will be supplied for all parameters. If you are unsure about a parameter, use the default value (click the "Help" button in the lower right corner of the Settings window for specific Help information). After all the values for each dialog tab are entered, click the next tab to advance to the next set of information for setting up the test.



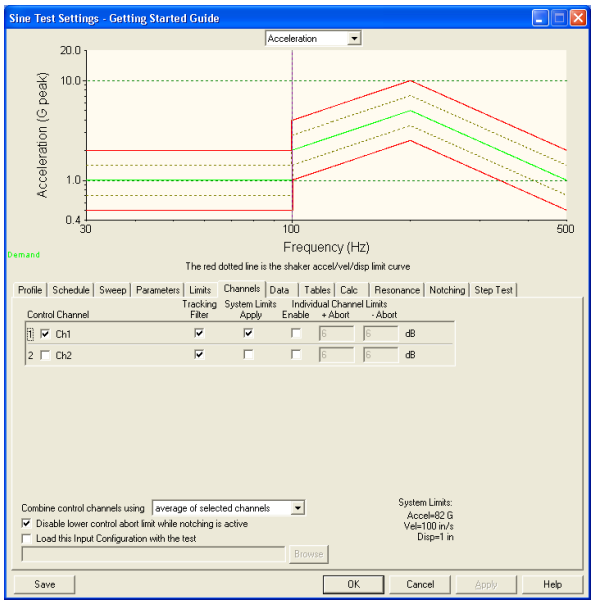
1. Sine Profile - The amplitude and frequency breakpoints and the desired control parameters (acceleration, velocity or displacement) for the test are entered here. Use the scrollbar to scroll through the defined segments and the Insert/Delete buttons to add or remove segments. The small arrow next to the numbers on the left of the window indicates the current insertion/deletion point. A test may be composed of over 1000 segments.
2. Sine Schedule - The duration of the test is entered here. Durations may be entered in time duration, number of sweeps or number of cycles. The test schedule is also used to schedule sweeps scaled to different amplitude levels and to select one or more fixed frequency tones.
3. Sine Sweep - Your sweep rate is set next. Enter the sweep rate and click the drop box to select the desired units.
4. Sine Parameters - The feedback control parameters for the test are entered here. For most tests, the parameters may be left at their default values. In some cases (such as when the control accelerometer sees a large resonance) these values will need to be tuned.

5. Sine Limits - The tolerance and abort limits for the test are entered here. The control tolerance and abort limits apply to the control signal. If monitoring channels are being used, enable the appropriate channels in the Sine Channels dialog box and enter the plus and minus abort limits for the monitor channel. All limits are measured in dB relative to the demand signal at the active frequency.
The tolerance lines are reference lines shown on the graphs (brown dashed lines) and are used to determine when the controller goes from “Starting” to "Run" mode when starting a test (Run button is Yellow during “Starting” and changes to Green when “Running”).
The Plus and Minus aborts are limits that, when exceeded, cause the test to abort. The control abort lines are shown on the graphs as solid red lines.



The maximum output voltage limits, both absolute (Max Output parameter) and relative to the measured acceleration level (Max System Gain parameter) are also entered here. These parameters are safety limits that will cause the test to abort when something goes wrong (for example, when an accelerometer cable comes loose.)
Refer to the "How to tune Sine controller parameters" section in the manual for more information on how to determine the appropriate Max Output and Max System Gain parameters for your test.

6. Sine Channels - The control channels for the test are selected here, as well as a way to combine the selected control channels and whether or not to use tracking filters for either the control channel or the monitor channel inputs.



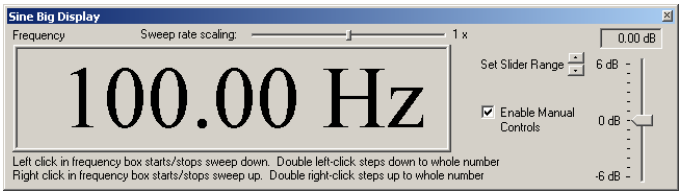
7. Sine Data Storage - The directory, into which the data generated by this test will be stored, is entered here. Data can be automatically stored at a regular time interval, sweep interval, at the end of each level (levels are defined using the Schedule dialog box) and at the end of the test. Select the check boxes for your desired data storage times and enter the desired interval times/cycles.

At this point the test definition is complete. Click the "Finish" button to close the dialog box. You will be asked if you want to save the test definition to the hard drive. Click the "Yes" button; enter the desired name and click the "Save" button to save the test.

To access parameters for specialized tests, select the Test..Edit Test Settings menu command (or use the toolbar button "Settings") and click the Resonance, Notching or Step Test tabs.

Additional Tips & Tricks for SineVIEW

To show a large display of Frequency and input readings, select **View..Sine Big Display** (**Ctrl+B**).



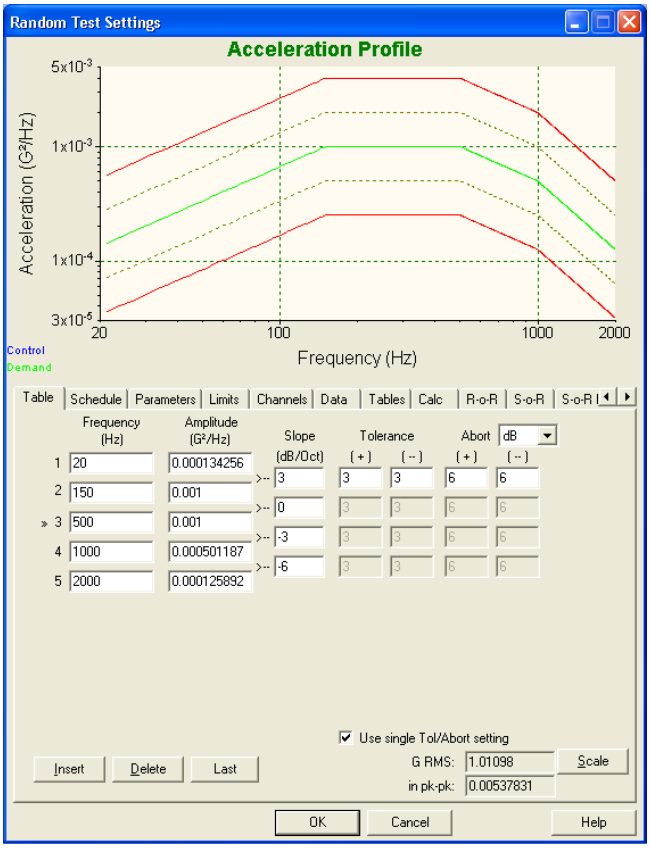
Click 'Enable Manual Controls' to *manually control the frequency and amplitude* of the sine tone

Left mouse click on frequency toggles sweep down
Righ mouse click on frequency toggles sweep up
Double-click frequency steps to integer Hz values
Mouse scroll wheel increases or decreases the dB level of the test

When defining the sweep rate in sine, you can change the sweep rate from "oct/min" to "min/sweep (Logarithmic)" to see how long one sweep will take.

RandomVIEW TEST SET-UP:

To run a preset test profile, click on the Test Type button and select “Random”. Next, click the Open Test button and select a profile. Or, to define your own profiles, click the New Test button and select “Random” to begin defining a new Random test. This will guide you through the following series of configuration dialog tabs. Default values will be supplied for all parameters. If you are unsure about a parameter, use the default value (click the “Help” button in the lower right corner of the Settings window for specific Help information). After all the values for each dialog tab are entered, click the next tab to advance to the next set of information for setting up the test.



1. Random Table - The amplitude and frequency breakpoints for the test are entered here. Use the "Insert" and "Delete" buttons to add or remove segments. The small arrow next to the numbers on the left of the window indicates the current insertion/deletion point.
2. Random Schedule - The duration and output amplitude for the test are entered here. Durations are entered in time, using the format hours:minutes:seconds.
3. Random Parameters - The feedback control parameters for the test are entered here. For most tests the parameters may be left at their default values. In some cases (such as when the control accelerometer sees a large resonance) these values will need to be tuned.
4. Random Limits - The tolerance and abort limits for the test are entered here. All limits are measured in dB relative to the demand signal. The tolerance lines are reference lines shown on the graphs (brown dashed lines) and are used to determine when to switch to "Run" mode when starting a test. When the number of lines outside the abort limits exceeds the "Max Outlier %", the test will be aborted. The abort lines are shown on the graphs as solid red lines.
   The Max System Gain and Output Threshold parameters are safety limits that depend on your particular shaker and amplifier. Refer to the "How to tune Random controller parameters" section in the manual for more information on how to tune these parameters for your system.
   The maximum output voltage limit is also entered here. This parameter limits the maximum output voltage produced by the controller.

5. Random Channels - The control channels are selected here, as well as averaging or extremal channel combination methods.
6. Random Data Storage - The directory into which the data from this test will be stored is selected here. Data can be automatically stored on a regular time interval, at the end of each level (levels are defined using the Schedule dialog box) and at the end of the test. Select the check boxes for your desired data storage times and enter the desired interval times.

At this point the test definition is complete. Click the "Finish" button to close the dialog box. You will be asked if you want to save the test definition to the hard drive. Click the "Yes" button; enter the desired name and click the "Save" button to save the test.

To access parameters for specialized tests, select the Test..Edit Test Settings menu command (or use the toolbar button "Settings") and click the R-o-R, S-o-R, Notching or Import Test tabs.

Additional Tips & Tricks for RandomVIEW

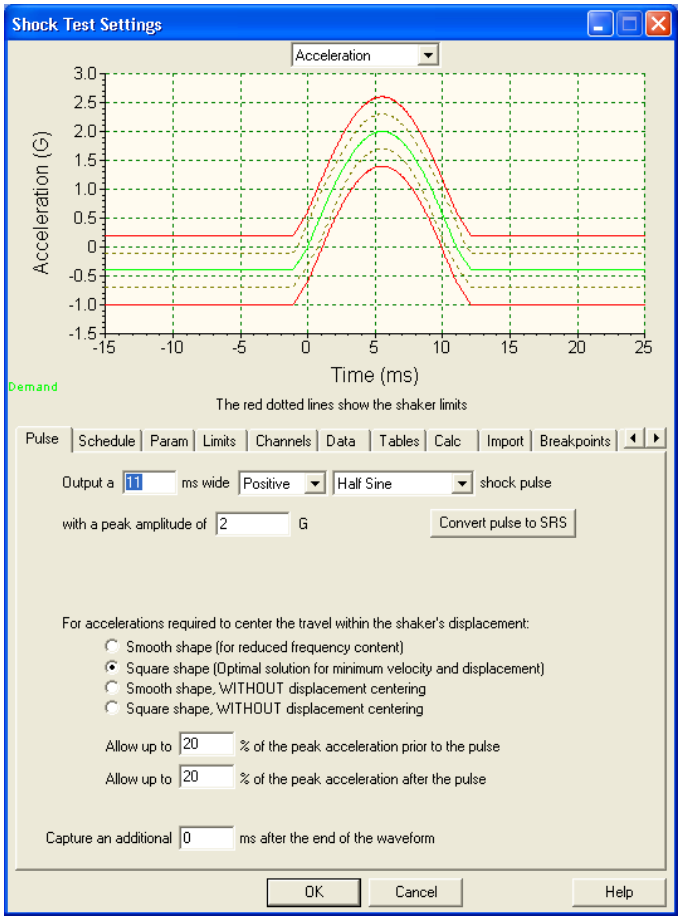
To see the full spectrum outside of the control band, select **Graph..Edit Graph Settings (Ctrl+G)** and clear the check box for "Show Only Active Lines".

When generating random profiles from recorded data, the high Hz content that drops off and has no significant levels can be quickly removed by selecting the last significant Hz in the table and clicking Last.

ShockVIEW TEST SET-UP:

Click the New Test button and select “Shock” to begin defining a new Shock test. This will guide you through the following series of configuration dialog tabs. Default values will be supplied for all parameters. If you are unsure about a parameter, use the default value (click the “Help” button in the lower right corner of the Settings window for specific Help information). After all the values for each dialog tab are entered, click the next tab to advance to the next set of information for setting up the test.

1. Pulse - The desired pulse width, shape and amplitude for the test are entered here. Also, the allowable pre-pulse and post-pulse acceleration levels are entered here as a percentage of the pulse peak acceleration level.
2. Schedule - The duration of the test, in number of pulses, is entered here. The schedule also may be used to enter levels scaled to different amplitudes.
3. Parameters - The parameters that control the behavior of the control loop are entered here. The parameters generally may be left at the default settings. Refer to the "How to tune Shock controller parameters" section for more information on how to fine-tune these parameters for your system.
4. Limits - The tolerance and abort limits for the test, set as a percentage of the peak output and measured relative to the demand time waveform, are entered here. The tolerance lines are reference lines shown on the graphs (brown dashed lines) and are used to determine when to switch to "Run" mode when starting a test. The Plus and Minus aborts are limits that, when exceeded, cause the test to abort. The limits on the allowable drive voltage are also entered here.
5. Channels - Select which channel or channels you want to use as the control signal here. When selecting multiple channels, the time waveforms of the selected channels are averaged together.



6. Data Storage - The directory into which the data from the test will be stored is selected here. Data can be automatically stored at a regular pulse interval, at the end of each level (levels are defined using the Schedule dialog box) and at the end of the test. All pulses that lie outside of the defined tolerance lines can also be stored.

At this point the test definition is complete. Click the "Finish" button to close the dialog box. You will be asked if you want to save the test definition to the hard drive. Click the "Yes" button; enter the desired name and click the "Save" button to save the test.

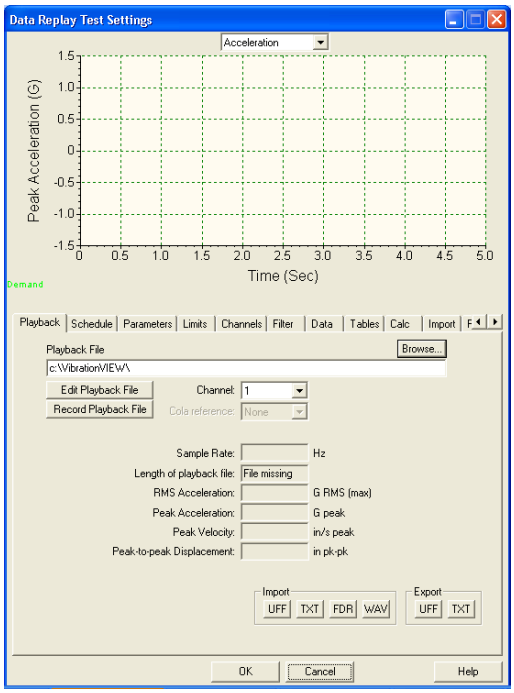
To access parameters for specialized tests, select the Test..Edit Test Settings menu command (or use the toolbar button "Settings") and click the Import, Breakpoints or SRS tabs.

Additional Tips & Tricks for ShockVIEW

To ***limit shaker displacement***, use the "Square Shape" setting on the **Pulse** tab. Also, be sure to un-check the "Mil-STD pulse limits" on the **Limits** tab if MIL-STD settings aren't required.

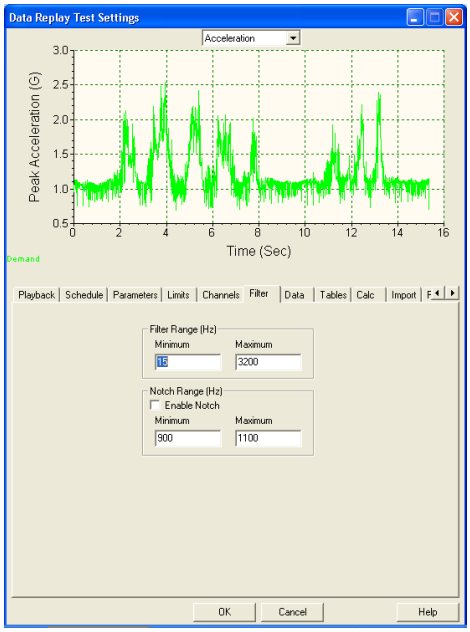
FDRVIEW TEST SET-UP:

Click the New Test button and select “Field Data Replicator” to begin defining a new FDR test. This will guide you through the following series of configuration dialog tabs. Default values will be supplied for all parameters. If you are unsure about a parameter, use the default value (click the “Help” button in the lower right corner of the Settings window for specific Help information). After all the values for each dialog tab are entered, click the next tab to advance to the next set of information for setting up the test.



1. Playback - The name of the playback file, the record level and the sample rate for that file are entered here. There are also buttons for exporting and importing waveform data. For details on importing and exporting waveform
   data, refer to the "How to import and export Field Data Replicator waveforms" section. As an option, the playback file can also be recorded at this time, by pressing the "Record Playback File" pushbutton.
2. Record - The playback file can be optionally recorded at this time. The record option is accessible by pressing the "Record Playback File" pushbutton on the "Playback" tab. Enter the desired sample rate in the sample rate dialog, select the connected channel, and press the "Next >" button to start data-recording. Press "Next >" again to stop recording, and enter the storage data file name. The wizard will return to the playback tab, where the newly recorded file is now ready for playback.
3. Schedule - The time duration of the test is entered here. The test schedule also is used to schedule durations where the output signal is scaled to different amplitudes.
4. Parameters - The feedback control parameters are entered here. In most cases the default values will be sufficient. Refer to the "How to tune Field Data Replicator controller parameters" section of the manual for more information on how to tune the parameters specifically for your system.
5. Limits - The abort limits for the test are entered here. The control (Ch1) abort limit applies to the control signal, measured using the accelerometer connected to channel 1. The Output Drive limits are also entered here.

6. Filter - The frequency range over which the controller will operate is entered here. Typically one would select control from 0 Hz up to 40% of the sampling rate. If you wish to filter out low frequencies to limit the displacement requirements or filter out high frequencies to avoid shaker resonances, a smaller frequency range can be specified. You can also enable Notch Filtering here. By placing a check in the Enable Notch checkbox, you may specify a frequency range to filter out.
7. Data Storage - The directory into which the data from this test will be stored is selected here. Data can be automatically stored at a regular time interval, at the end of each level (levels are defined using the Schedule dialog box) and at the end of the test. Select the check boxes for your desired data storage times and enter the desired interval times.



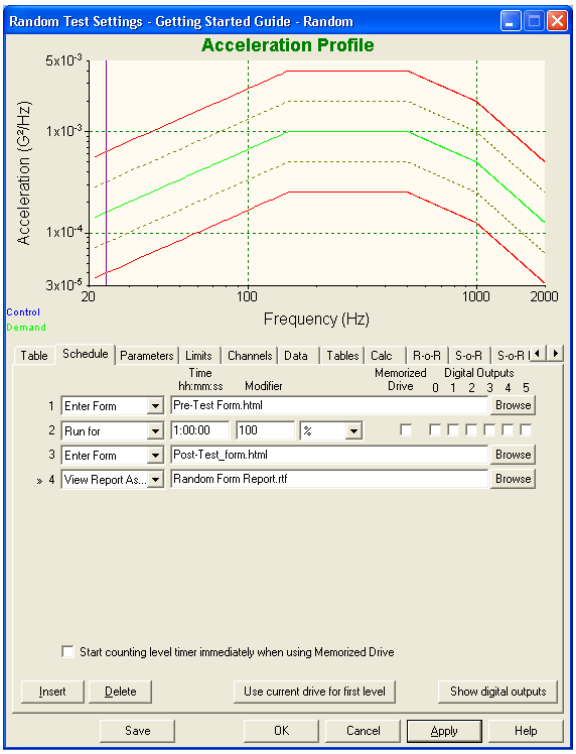
At this point the test definition is complete. Click the "Finish" button to close the dialog box. You will be asked if you want to save the test definition to the hard drive. Click the "Yes" button; enter the desired name and click the "Save" button to save the test.

AUTOMATIC REPORT GENERATION:

Reports are generated using mail merge type processing. The program reads in a template file, substitutes data values and graphs in place of keywords, and writes the resulting data to an output file. The template files can be either plain text or Rich Text Format files. Plain text files can have data values but no graphs. Rich Text Format files (using extension .rtf) can contain data values and graphs, as well as any text formatting and other graphics elements that can be inserted into an RTF file. From the VibrationVIEW software, click on the Help menu and select "Help" and click on the last item in the "How To" section, which is "Create Customized reports" to see the different keywords and examples for reporting as well as information on using Forms.

The default templates are stored in subdirectories of the directory c:\Program Files\VibrationVIEW\Templates. Sine templates are stored in the Sine subdirectory, Random templates in the Random subdirectory, etc. To create custom reports, new templates can be created using a RTF editor file and stored in the appropriate directory. One suitable RTF file editor is WordPad, a part of Windows 95/98/NT/XP that is usually installed under Start..Programs..Accessories..WordPad. If this program is not installed on your computer, it can be added by selecting it in the "Add/Remove Programs" control panel, Windows Setup tab, listed under "Accessories". Most Windows Word-Processor programs will also read and write RTF files.

To automatically generate a report during a test, go to *Settings..Schedule* and click on the "Insert" button in the lower left corner to add a step to the schedule. Use the dropdown list and select a report option (view report, save report, etc).



Another feature that can be used with automatic reporting is the Forms tool. See the Help file or Manual for more detailed information on incorporating forms into your test and customized reports.

Data entry forms can be used to schedule data entry at any time during the test. Typically a data entry form is used to record test setup at the start of a test. The most recent data entry form data is accessable from the report.

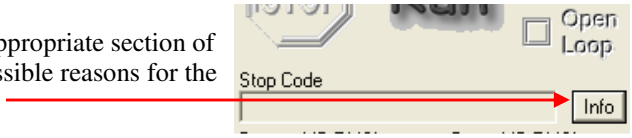
The forms are html (hypertext markup languague) files which typically are located in C:\VibrationVIEW5\Program Files\Templates\Sine\Forms, C:\VibrationVIEW5 \Program Files\Templates\Random\Forms, C:\VibrationVIEW5\Program Files\Templates\Shock\Forms, or

C:\VibrationVIEW5\Program Files\Templates\DataReplay\Forms. The html file can contain any html element which can be displayed by Internet Explorer. A typical html form file contains a single form with controls for text entry. The text can be automatically inserted into the test report. With a form the data entry can occur during test setup, and the appropriate report run at the end of the test.

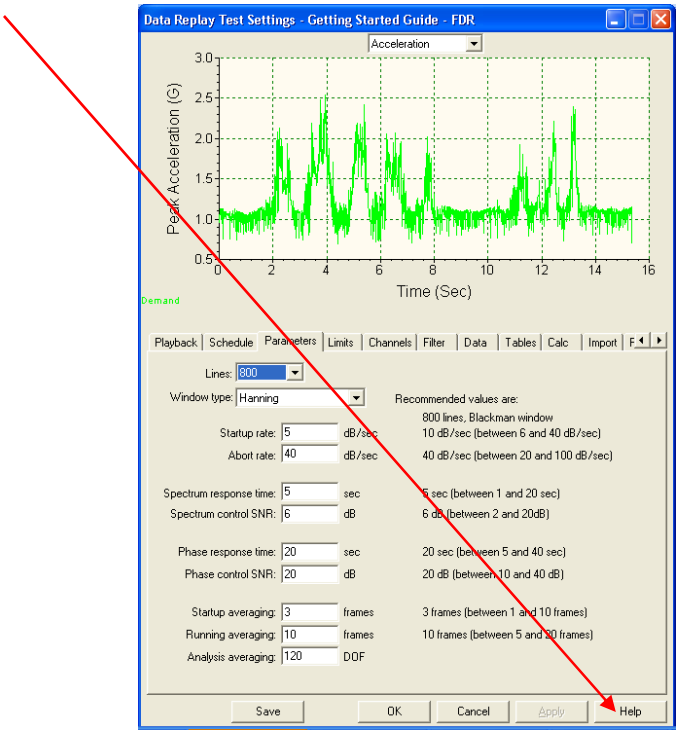
An HTML Form is a section of a document containing normal content, markup, special elements called controls (checkboxes, radio buttons, menus, etc.), and labels on those controls. Users generally "complete" a form by modifying its controls (entering text, selecting menu items, etc.), before submitting the form to VibrationVIEW for processing.

Automated Help File:

The *Stop Code* section *Info* button links to the appropriate section of the Help File that explains the stop code and possible reasons for the code.

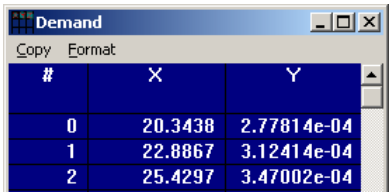


The *Help* button in the lower right corner of all *Configuration* menu windows or *Settings* windows link to the section of the Help File that explain each of the entries in these windows.



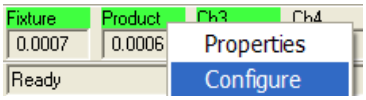
TIPS & TRICKS:

Graphs



- To ***copy the data*** for a graph trace, either double click the graph trace label and select the data tab and copy, or hold down the **Ctrl** key and double click on the trace of data. Click "Copy" to copy the numbers to the clipboard, and then paste in another application such as Excel.™
- ***Zooming the graph*** – Right click, hold and drag the mouse to draw a zoom window. Release the mouse button to zoom into the rectangle you drew. To zoom back out, double-click the right mouse button.
- To ***view test detail information***, **Insert Graph** in the **Edit Graph** window and choose **Text Window**. For example, if want to show the serial number of the 8500 unit, set one of the "graph legends" lines to **[PARAM:Cal1Serial]**
- To ***show a second graph of a stored data*** file, select **Window..New Window** to create the new graph window, and then **Graph..Edit Graph Settings** (**Ctrl+G**) to set the type of graph displayed.
- To ***copy the graph layout*** from one test to another, select **Graph..Save Graph Layout** to save the current layout, and then use **Graph..Restore Graph Layout** to restore this layout. This can also be used to view multiple graphs of a stored data file.
- For ***more graph and cursor options***, right click on either the X or Y axis label.

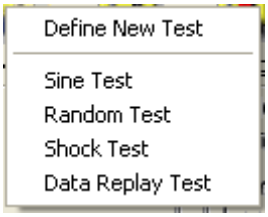
Miscellaneous



- Transducers can be named by selecting **Configuration..Inputs** (**Ctrl+I**). Each channel can be given a specific name (ex. Ch1 could be "Fixture" and Ch2 could be "Product"). This is useful for reporting, as these names are carried throughout the graphs and other screen displays, and are stored in the data files.
- A quick method of getting to the ***Configuration of an input channel*** is to right click on the label in the channel display.
- **View..Reset Control Buttons** restores all control buttons to a "home" position if they get "lost" when making screen resolution changes.
- Retrieve the current ***calibration values*** – Select **Configuration..Calibration**, then right click the Next button to bypass the calibration procedure and click Report. Use this information to compare to the results of the re-calibration.
- To quickly find ***recently run test profiles***, select **Test..Open Recent Tests**, or right click the **Open Test** icon for a list of the last 10 tests.
- To quickly find the ***data for recently run tests***, select **Help..Help with Recent Test**, or **File.. Recent Data Files**, or Right Click on the **Data** icon.
- When entering time values on the 'Schedule' tab, you can use shorthand "10h" for 10 hours or "5m" for 5 minutes, or combinations like "1h30m".
- To ***restore a profile from a VibrationVIEW data file***, use **File..Open Test Profile**. Set Files of type

to "**Extract profile from data (*.v?d)**" Select the saved data file.

- ***Automatically save a report*** by inserting a step at the end of a test schedule to **Save Report** using the dropdown arrows. Also, be sure to choose a template from which to create the report.
- Save reporting time by using the ***Forms*** feature that is available in the test schedule drop downs. This information can then be used in the ***Auto Report***.
- Most of the icons have quick features available by right clicking on them. For example, right clicking on the **New Test** icon show these options in a Random test profile.



- **View..Test Tabs** will show tabs at the bottom of the screen that link to recent profiles during an open session of VibrationVIEW. A test can be stopped, a new one started and stopped and then return to the original test to resume with the use of these **Test Tabs.**
- Right click on a profile name in Widow's Explorer to **modify a test profile while VibrationVIEW is running** a test. Note: In order for this to work on a computer, it must have been connected to an 8500 hardware box at least once.
- **Quick Reports** provides for easy report generation for any test. Simply right click on **Report..Setup Quick Report** and select the information to be displayed in a report. Once this is done, click on the report button to generate the report automatically.

Cursors

- Hold down the **Shift** key while moving the cursor to ***snap to the nearest peak***.
- Hold down the **Ctrl** key while moving the cursor to ***snap to the nearest valley***.
- ***Delta Cursor*** – Move the cursor to point 'A' on the graph and hit the **Home** key, Then move to point 'B' to show a delta cursor between points 'A' and 'B'.
- Press the **PgUP** and **PgDn** keys to change the type of delta cursor measurement.
- Press the **Insert** key to add a cursor measurement as a **graph annotation**.
- Double-click on a graph annotation to **change the text** to any message you want to add to the graph.

Recorder

- To view the recorder buttons, select **View..Recorder Buttons**.
- To ***edit*** the directory for the recording, sample rate, and channels to record, left click on 

	Function Key Mapping
F1	Display help for the current window
F2	Show the Control Buttons
F3	Show the Channel Buttons
F4	Move the selected annotation
F5	Refresh Graph
F7 or Del	Remove the selected annotation
F8	Start Test Sequence
F9	Run Test
F10	Stop Test
F11	Advance immediately to next level
F12	Print the screen image to the printer
Shift+Ins	Add annotation at nearest peak
Ctrl+Ins	Add annotation at nearest valley
Ins	Add an annotation to the graph
"→"	View next data file in directory
"←"	View previous data file in directory
Alt+PrtSc	Copy the screen image to the clipboard to be pasted into Paint or Word
Ctrl +	***Key Mapping***
"**A**"	Autoscale the Y axis
"**B**"	Show the Sine Big Display window
"**C**"	Copy the selected graph to the clipboard
"**D**"	Show the Cursor display
"**E**"	Change the eMail configuration
"**F**"	Zoom out to fit the data
"**G**"	Change the selected graph settings
"**I**"	Change the input configuration
"**M**"	Save the current output to Memorized Drive
"**N**"	Create a new graph
"**O**"	Open a stored data file
"**P**"	Freeze/Unfreeze the graph updates
"**Q**"	Autoscale all open graphs
"**R**"	Generate a report
"**S**"	Save the data to a file
"**T**"	Inserts Time/Date stamp in *Test Notes*
"**V**"	Paste text from the clipboard
"**W**"	Identify the primary 8500 box
"**X**"	Copy text to the clipboard
"**Y**"	Show the COLA configuration window

	Sine	Random	Shock	F.D.R.
Run	Test is stopped			
Run	Test is running			
Run	Starting test			
Run	Holding frequency with phase tracking of the reso-nance	Starting test using Memorized Drive		
Run	Holding fixed fre-quency			
Run	Test paused / Waiting for operator action			

NOTES