



# 10 Things You Didn't Know You Could Do With Your Vibration Research Controller

*Today's Presenter: Aaron Offringa*



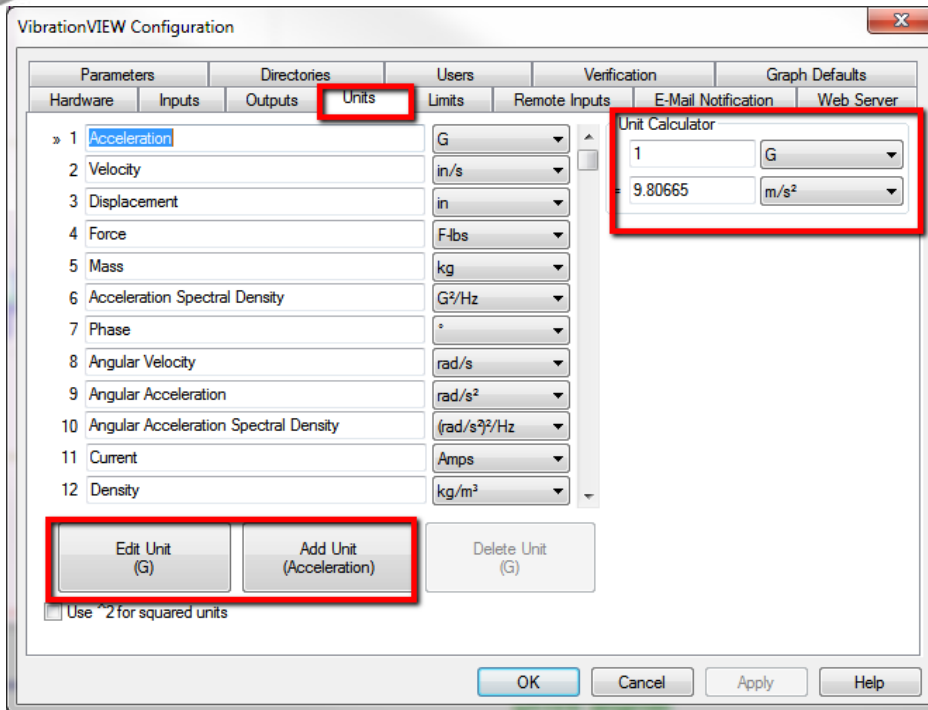
# 10 Things you didn't know

- Unit Calculator
- Multiple Instances (of VibrationVIEW)
- Hardware Clocking
- Setting up users and sharing settings across windows login
- Setting up a Strobe

# 10 Things you didn't know

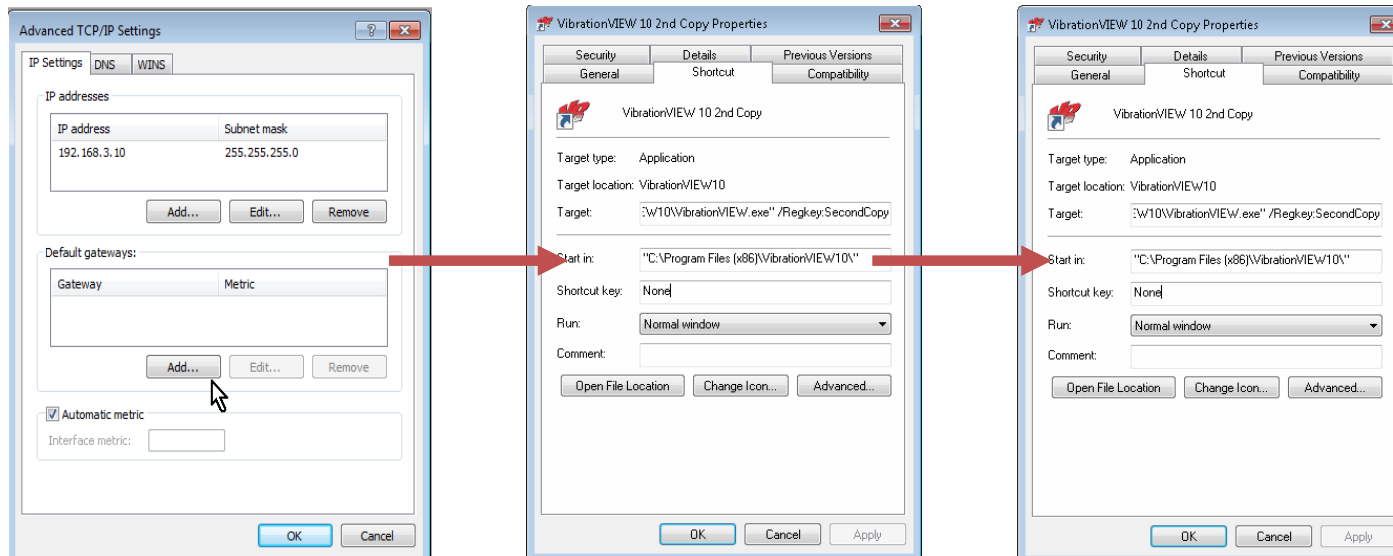
- Cola features
- Traces and Overlays
- Pre-Test
- HTML Email
- Lines of Resolution

# Unit Calculator



- The unit calculator allows for a quick access to convert from one unit to another.
- There is also the option in this tab to create your own units as long as you know the calculation.

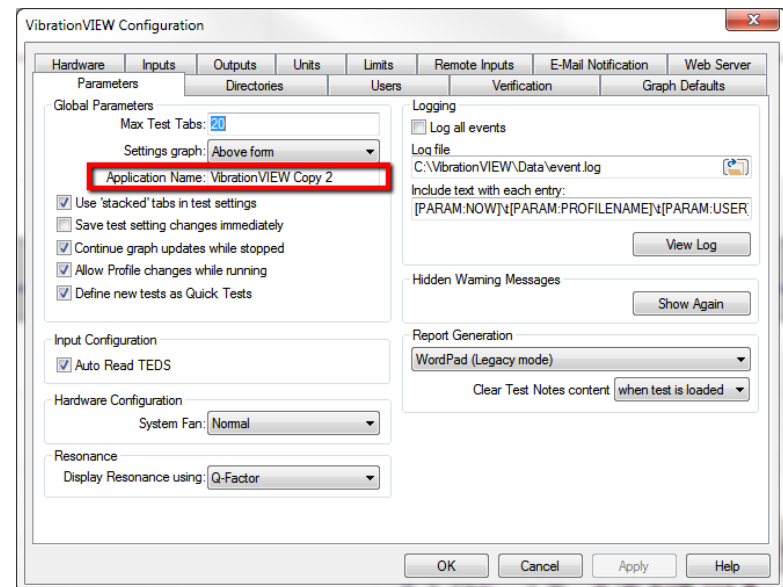
# Multiple Instances



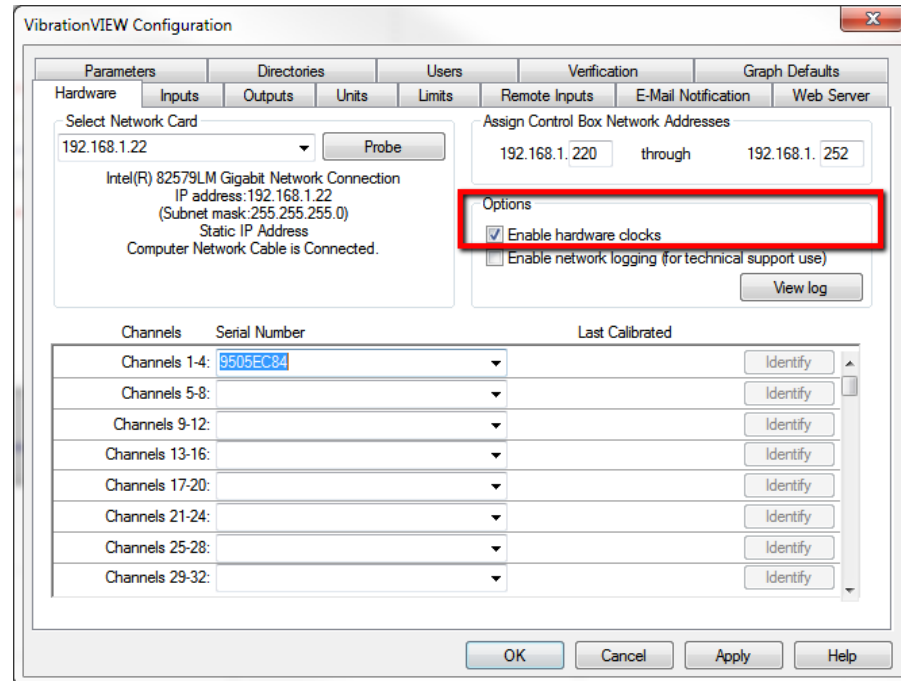
- Each instance of VibrationVIEW requires its own IP address.
- To do so you must go to the TCP/IP settings and create an additional IP address. For each address you create you must use a separate subnet.
- You then have to create a copy of your VibrationVIEW shortcut on your desktop.

# Multiple Instances

- After you open up the properties of the copy of your shortcut for VibrationVIEW you must edit the target field.
- Add /Regkey:SecondCopy to the end of your target field while keeping what was already there.
- Then make sure this second copy uses the added network address
- After your second instance boots go to your configuration parameters in the software and rename the application name to 2<sup>nd</sup> copy so that there is no confusion when running your tests.

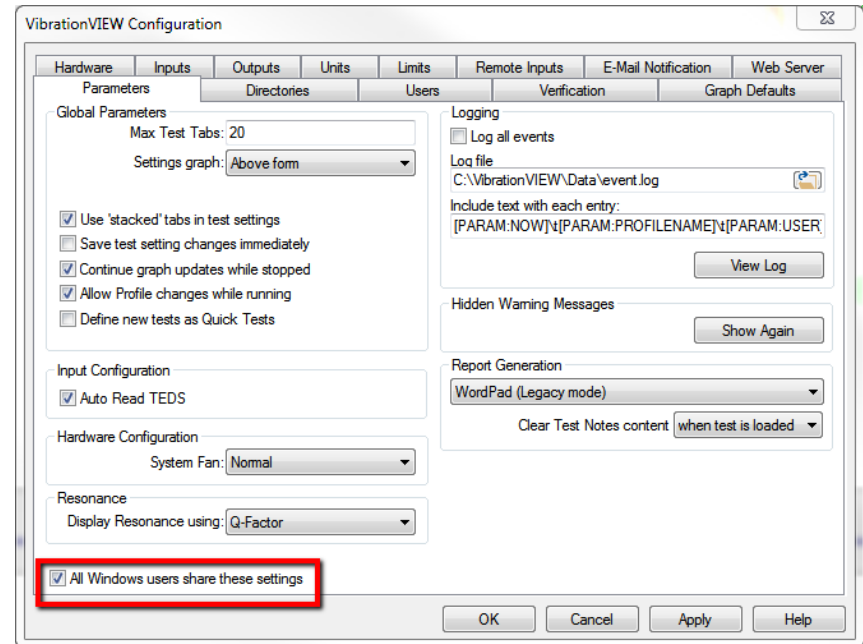
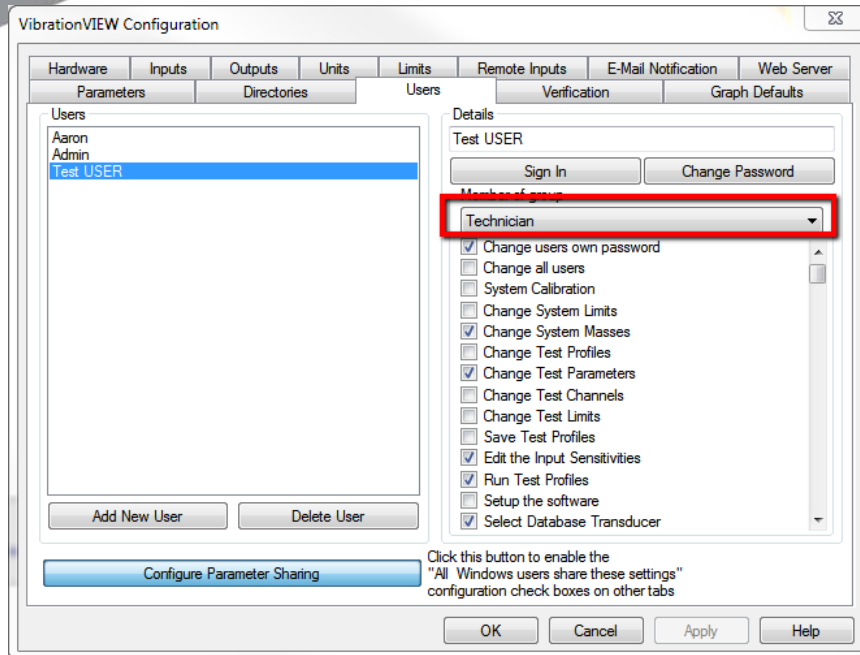


# Hardware Clocking



- In VibrationVIEW 2014 we've added the dialog box for interbox connections. This system monitors the cables and connections and will alert you if a cable comes loose.
- We've also added the ability to use hardware clocking. This improves the data syncing between multiple hardware boxes.

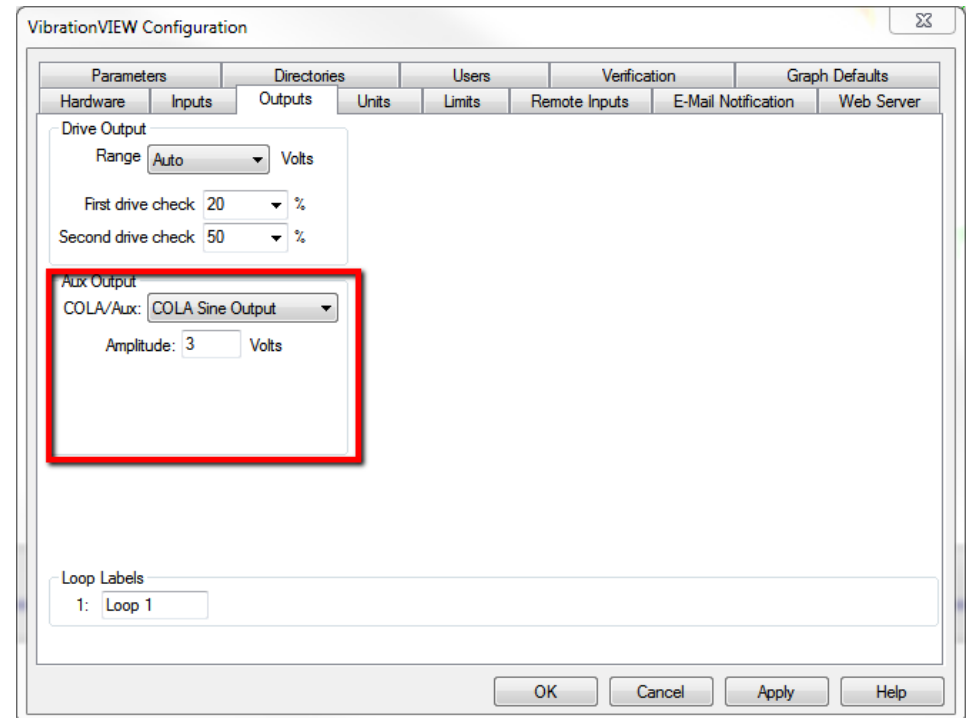
# Setting up Users



- In VibrationVIEW the admin user can make multiple users profiles which allows them to pick and choose what privileges are given to each user in the software.
- In the top right image, the Windows admin can make it so certain configuration settings like the 'parameters' menu have settings shared globally across all Windows users who log into that particular PC



# Strobe



- A function of the COLA Sine Output option allows you to sync a stroboscope with the sine wave.
- The VibrationVIEW software allows you to watch the bending of the DUT.
- The software allows you to do this in any degree of phase that you desire.

# COLA Features

DC Offset Test

0 RPM = 0 Volts  
1000 RPM = 10 Volts

Control Channel: Ch4  Superimpose Drive Signal

Tuning Parameters

Slew Rate (On): 1 RPM/sec  
Slew Rate (Off): 1 RPM/sec  
Proportional: 0.1  
Integral: 0.1

Limits

Max Output: 10 Volts  
Min Output: -10 Volts  
 Abort when limits reached

VibrationVIEW Configuration

Parameters Directories Users Verification Graph Defaults  
Hardware Inputs Outputs Units Limits Remote Inputs E-Mail Notification Web Server

Drive Output

Range: Auto Volts  
First drive check: 20 %  
Second drive check: 50 %

Aux Output

COLA/Aux: Disabled  
Disabled  
Differential Output  
COLA Sine Output  
COLA Square Output  
COLA Pulse Output  
DC Frequency Ref.  
DC Offset Reference  
DC Offset Control

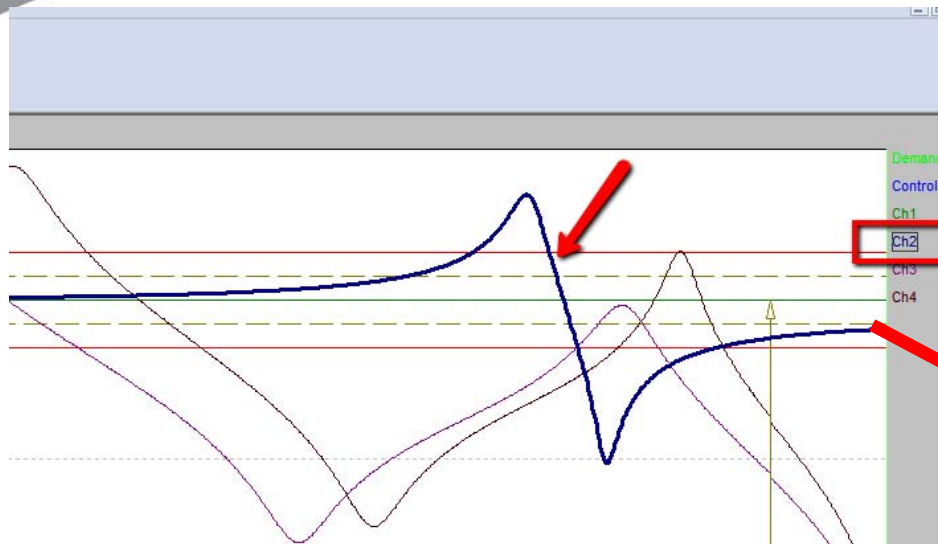
Loop Labels

1: Loop 1

OK Cancel Apply Help

- In addition to the Strobe, the COLA offers many other options such as Dual Phase control, DC Offset, COAL Square Output, and others..
- In the above image, the menu for DC Offset is shown where users can use that option for testing such as “Stroke and Poke” and Motor Control among others.
- Also, here is a link to an example of DC offset done by VR. <https://www.youtube.com/watch?v=wznr6Sym7g>

# Traces and Overlays

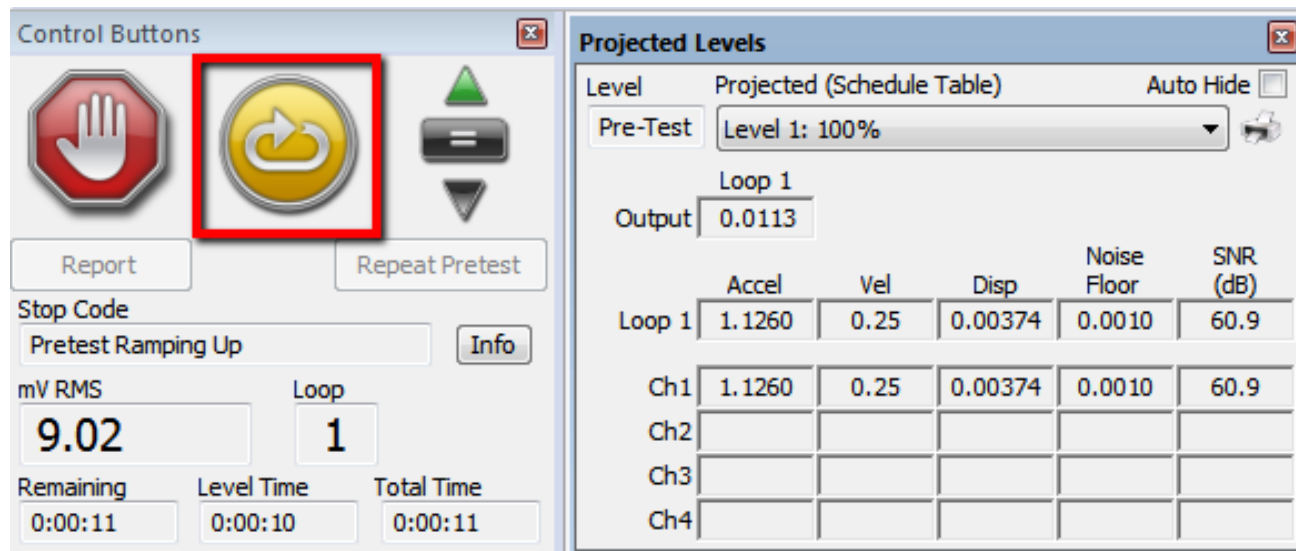


	A	B
1	Frequency (Hz)	Ch2 (G)
2	20	1.000431
3	20.039179	1.00043
4	20.078432	1.00043
5	20.117765	1.00043
6	20.157173	1.000429
7	20.196659	1.000429
8	20.236223	1.000429
9	20.275864	1.000429
10	20.315582	1.000428
11	20.355379	1.000428
12	20.395252	1.000429
13	20.435205	1.00043

- Copying traces is as simple as clicking and dragging to Excel or Word.
- You also have the ability to copy traces from one test and paste them into the next test so that you can compare the channel responses.
- You are also capable of saving traces to your data and given the ability to see that trace at a later time.

# Pre-Test

- When Pre-Test is activated the projected levels box will appear and the Pre-Test button will appear before the full test.
- The controller sends out a low-level signal and then estimates what each accelerometer is going to see at full level.
- This prevents you from damaging expensive equipment.



The screenshot displays two windows from the Vibration Research software. The 'Control Buttons' window on the left contains a red octagonal stop button, a yellow circular 'Pre-Test' button with a refresh icon (highlighted with a red box), and a black rectangular button with a minus sign. Below these are 'Report' and 'Repeat Pretest' buttons. The 'Stop Code' field shows 'Pretest Ramping Up' with an 'Info' button. The 'mV RMS' field shows '9.02' and the 'Loop' field shows '1'. At the bottom, 'Remaining' is '0:00:11', 'Level Time' is '0:00:10', and 'Total Time' is '0:00:11'. The 'Projected Levels' window on the right shows a dropdown menu for 'Pre-Test' set to 'Level 1: 100%'. Below this, the 'Output' is '0.0113'. A table displays projected levels for 'Loop 1' across four channels (Ch1-Ch4) for Accel, Vel, Disp, Noise Floor, and SNR (dB).

Level	Projected (Schedule Table)	Auto Hide			
Pre-Test	Level 1: 100%	<input type="checkbox"/>			
Loop 1					
Output	0.0113				
	Accel	Vel	Disp	Noise Floor	SNR (dB)
Loop 1	1.1260	0.25	0.00374	0.0010	60.9
Ch1	1.1260	0.25	0.00374	0.0010	60.9
Ch2					
Ch3					
Ch4					

# HTML Email

VibrationVIEW Configuration

Parameters Directories Users Verification Graph Defaults

Hardware Inputs Outputs Units Limits Remote Inputs E-Mail Notification Web Server

Mail server configuration

From: aaron@vibrationresearch.com  HTML Email

To: aaron@vibrationresearch.com  Enable bounce messages

Subject: Test status  Use STARTTLS

SMTP Server: smtp.gmail.com  Requires authentication

SMTP Port: 587 (Default port is 25) Username: vibrationresearch.com

Password: ●●●●●●●●

Message selection

Send status e-mail on test completion or aborted test

Send status e-mail on abort errors

Send status e-mail on schedule level changes

Send status e-mail every 60 minutes while a test is running

Message delivery options

Do not send any email notification

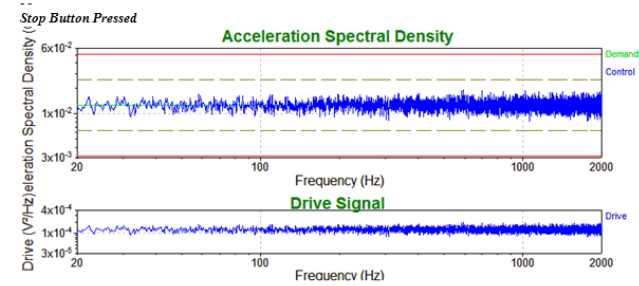
Enable email notification for ONLY the next test

Enable email notification for ALL tests

Send test message now

OK Cancel Apply Help

Data: Live Random Test Data  
Test:  
Data stored on Jul 18, 2014 14:44:36



#### Measurements:

Demand: 5.001 GRMS 0.04297 in pk-pk  
Control: 5.01 GRMS 0.04357 in pk-pk

Drive voltage: 0 Volts RMS

System gain: 0 Volts/G System gain limit: 5 Volts/G

Ch1: 0.0001216 GRMS Ch1 in-band: 9.076e-005 GRMS

Ch2: 0.003515 GRMS Ch2 in-band: 0.002819 GRMS

Ch3: 0.003451 GRMS Ch3 in-band: 0.00285 GRMS

Ch4: 0.003308 GRMS Ch4 in-band: 0.002764 GRMS

#### Test level schedule:

\*\* Test started: Jul 18, 2014 10:04:46, running for 0:04:39

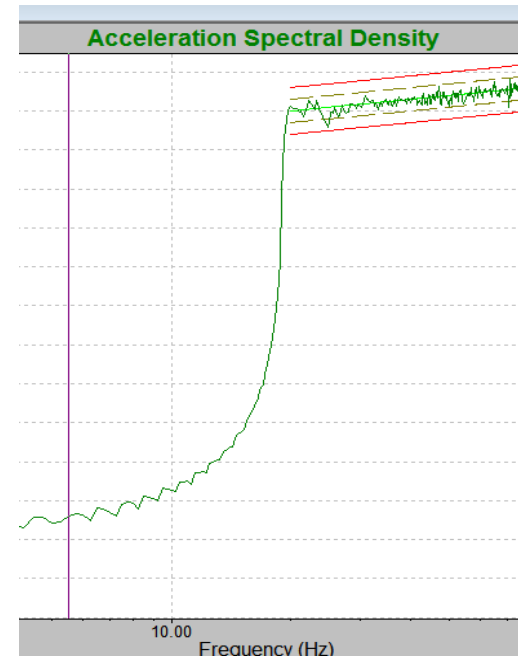
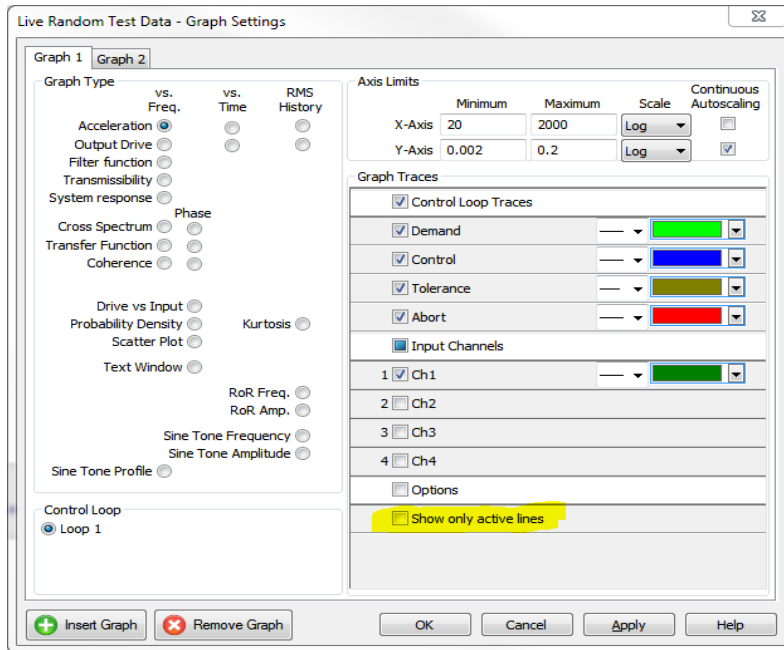
\*\* Current level: 1, running at 100 % for 0:04:13 of 1:00:00

Duration Level  
1) 1:00:00 100 %

- New to VibrationVIEW 2014 is the ability to now send HTML emails. Setting up your web and email option is the same. To activate the HTML email option you only need to check the box.
- The program will now send you your active graphs, current measurements, and your test level schedule. You also have the capability to edit the HTML email template to meet your specific needs.



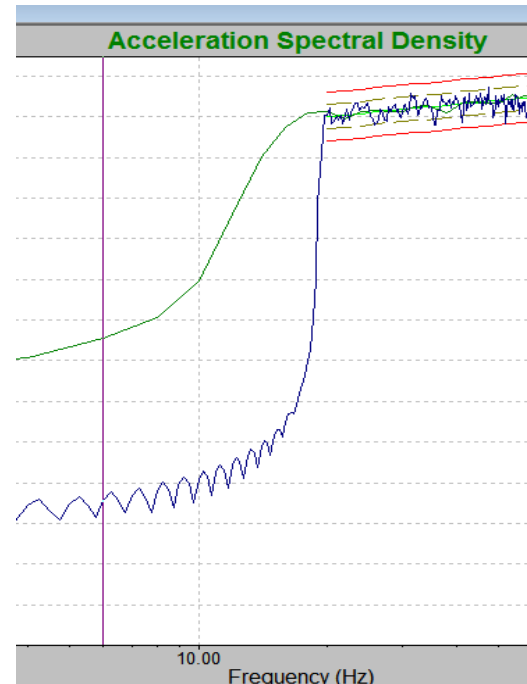
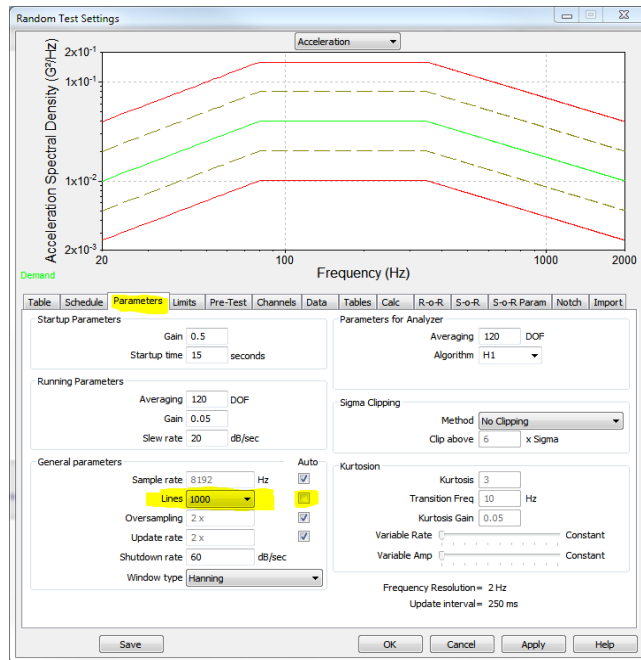
# Lines of Resolution



- VibrationVIEW offers the ability to adjust your lines of resolution and the ability to see what is happening on your shaker outside of the test you are performing.
- As you can see in the picture to the right, the drop off is almost immediate and this is due to the higher lines of resolution.



# Lines of Resolution



- In the above picture you can see that I changed the lines of resolution down to 1000. They were previously at 8000.
- The picture to the right now shows a blue and a green line. The blue line is from the previous test that had 8000 lines of resolution, the green line is from this test that is at 1000 lines of resolution. The roll off is not nearly as steep or as low. This additional energy equates to more displacement on your shaker.