

**Application Note:**

**DEWESoft 7.0 Test Setup Procedure**

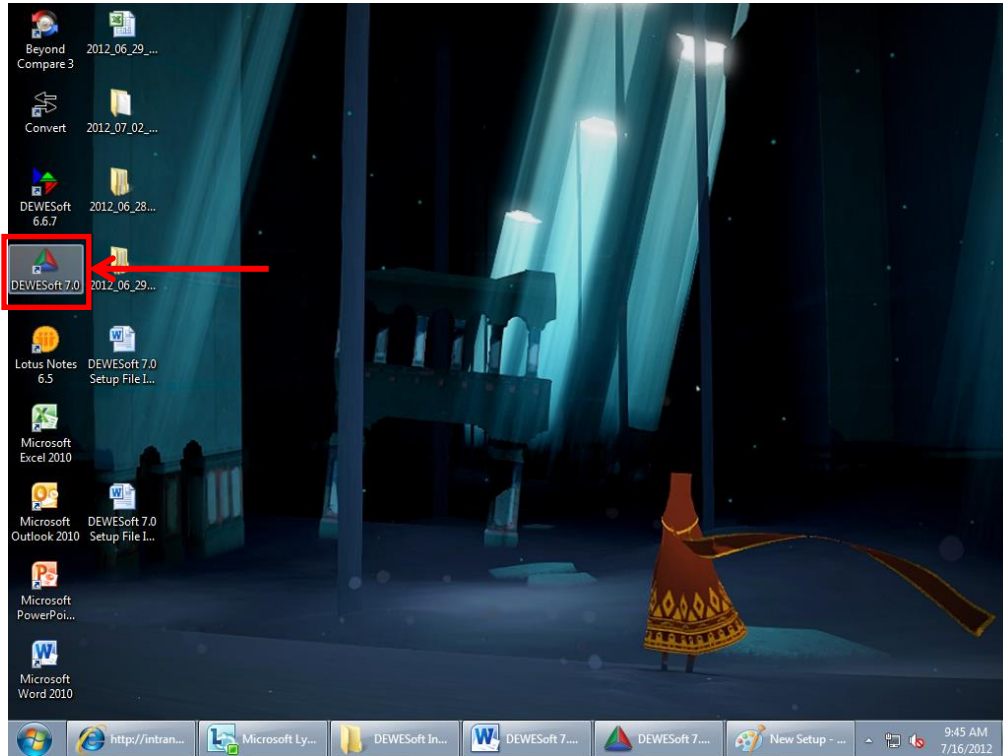
Stu Andrzejewski

ECE 480

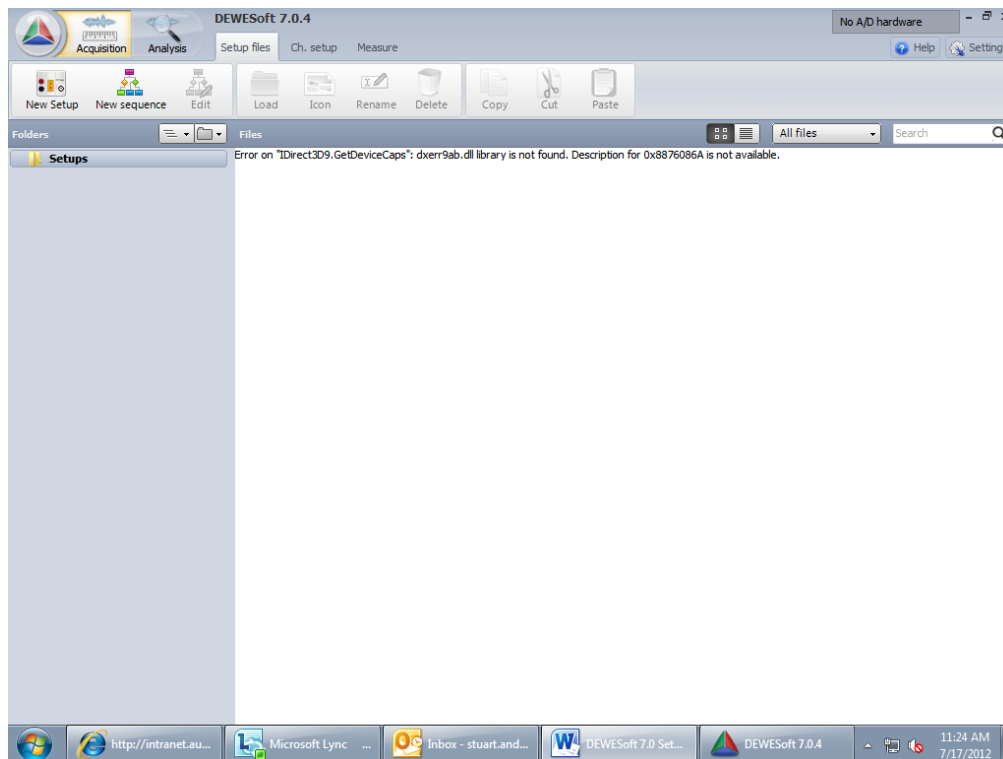
11/8/2013

*Abstract: This document provides step by step instructions on how to configure the DEWESoft vehicle CAN software program in order to specifically run tests for Blind Spot Monitoring (BSM) on automobiles. BSM is a newly emerging technology for increased safety in vehicle travel and further implementation in the future is highly likely.*

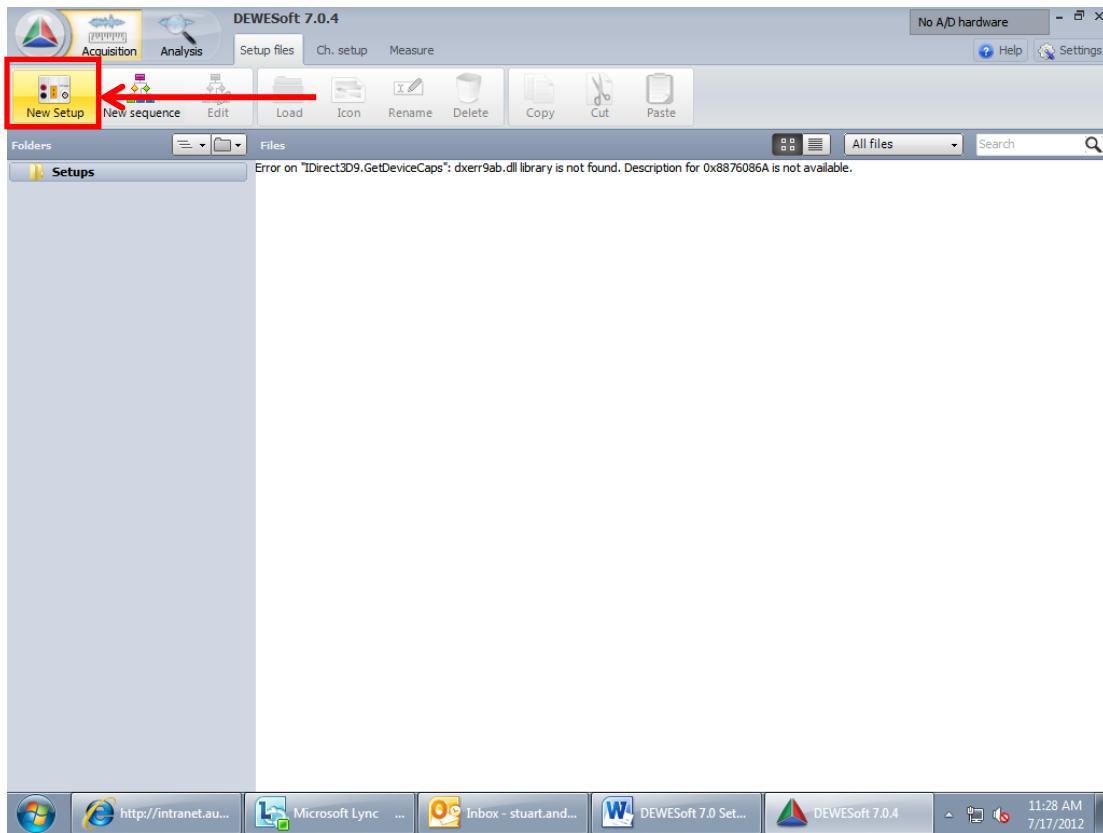
1. Open the DEWESoft 7.0 program. This can be done by double clicking on the shortcut from your desktop computer.



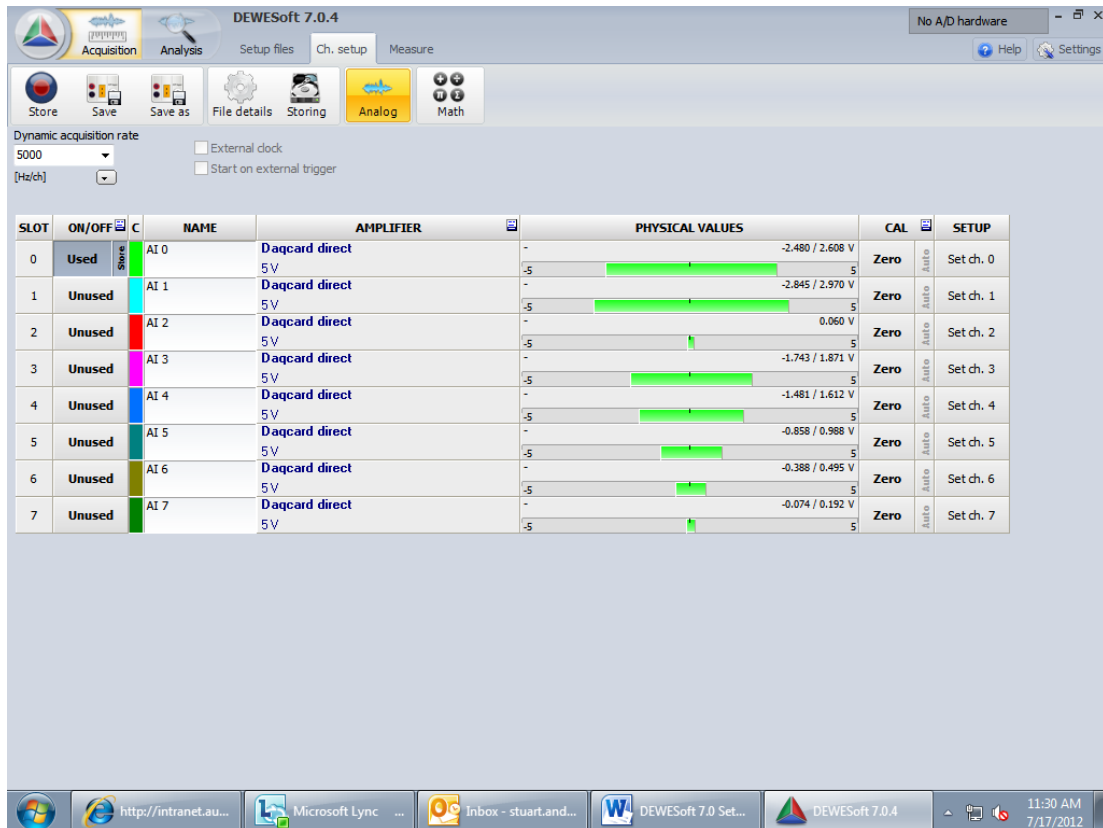
2. Allow the program to load. When fully loaded, you should then see a screen like this.



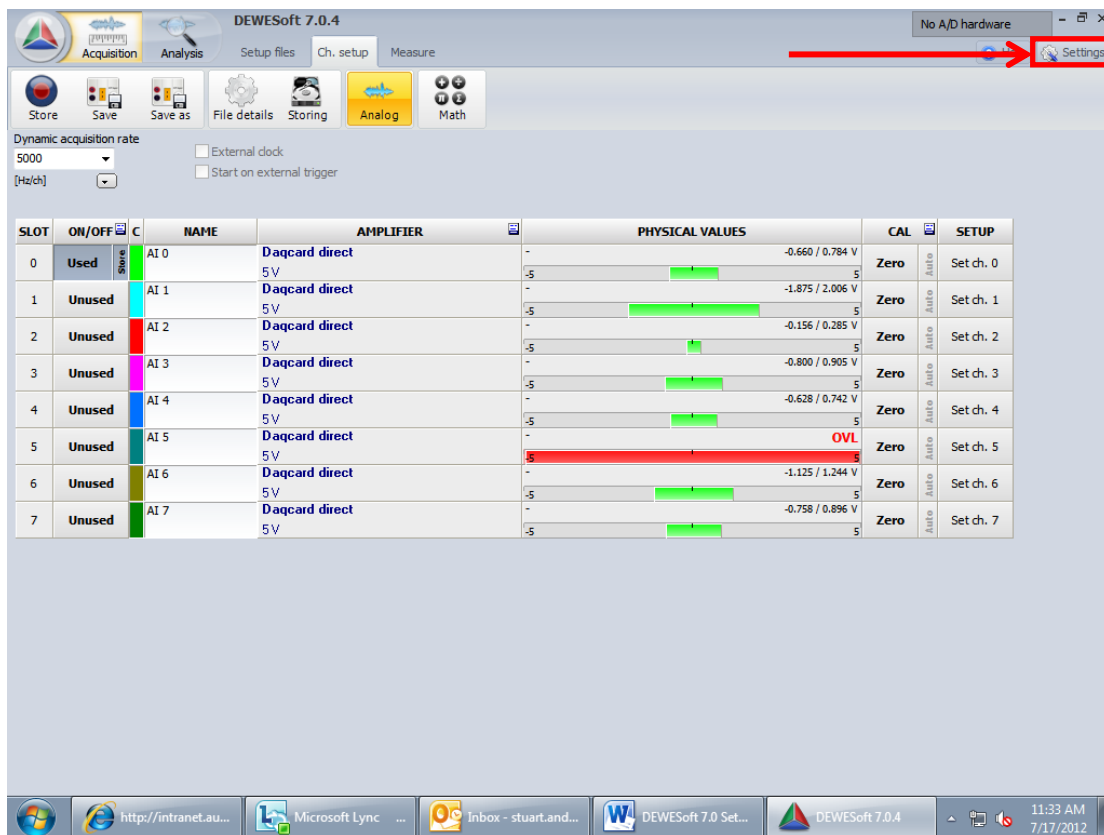
3. From here, click on the button located on the tab ribbon on near the top named "New Setup".



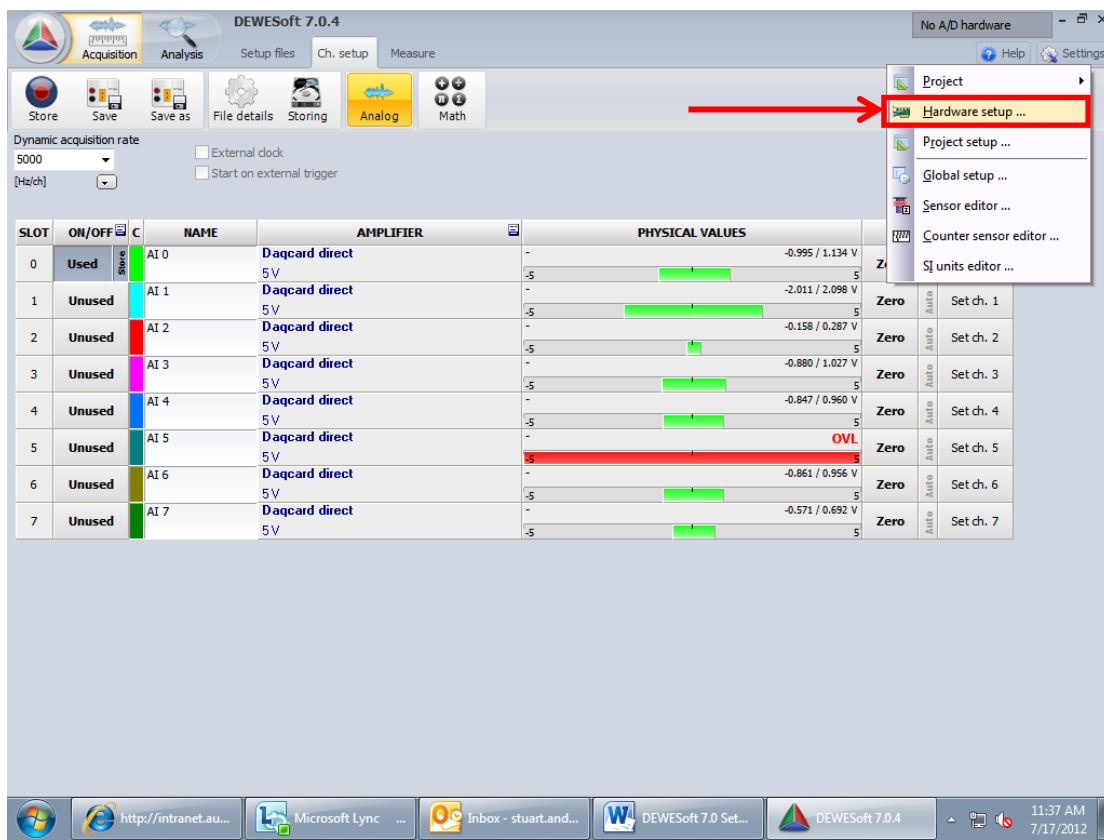
4. This screen will appear after clicking “New Setup”.



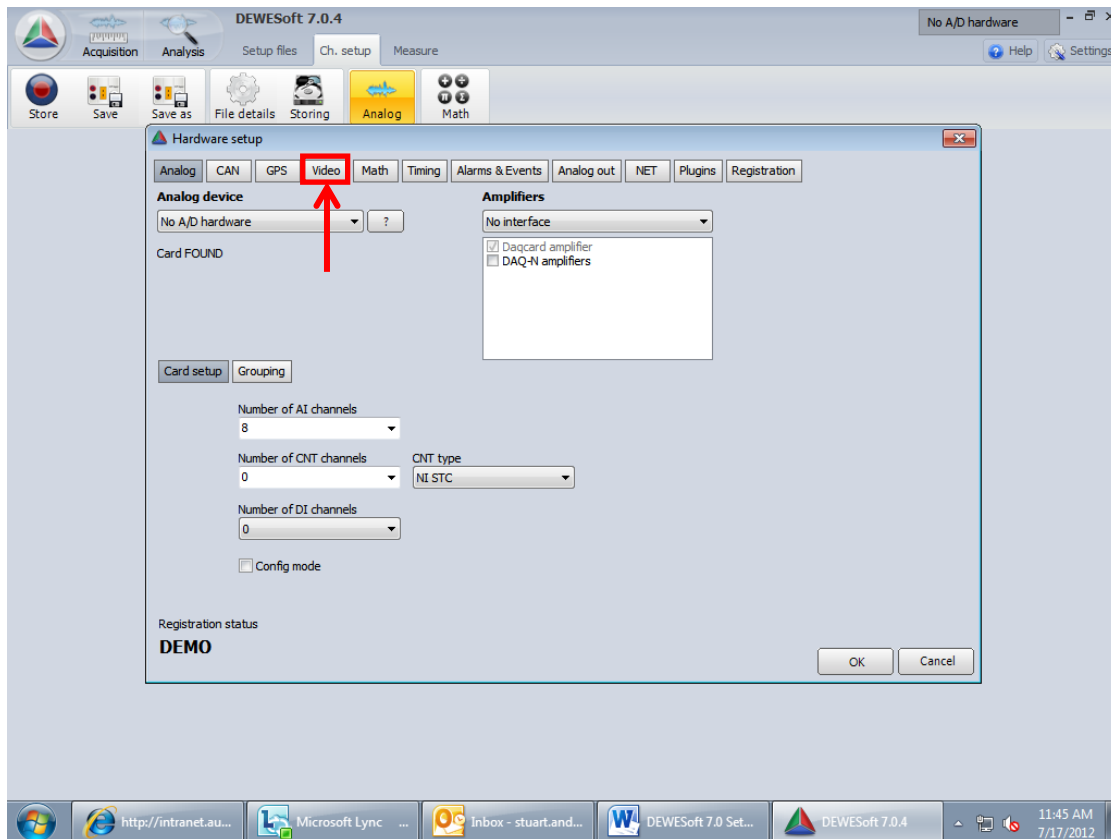
5. From here, select the “Settings” option in the top right hand corner.



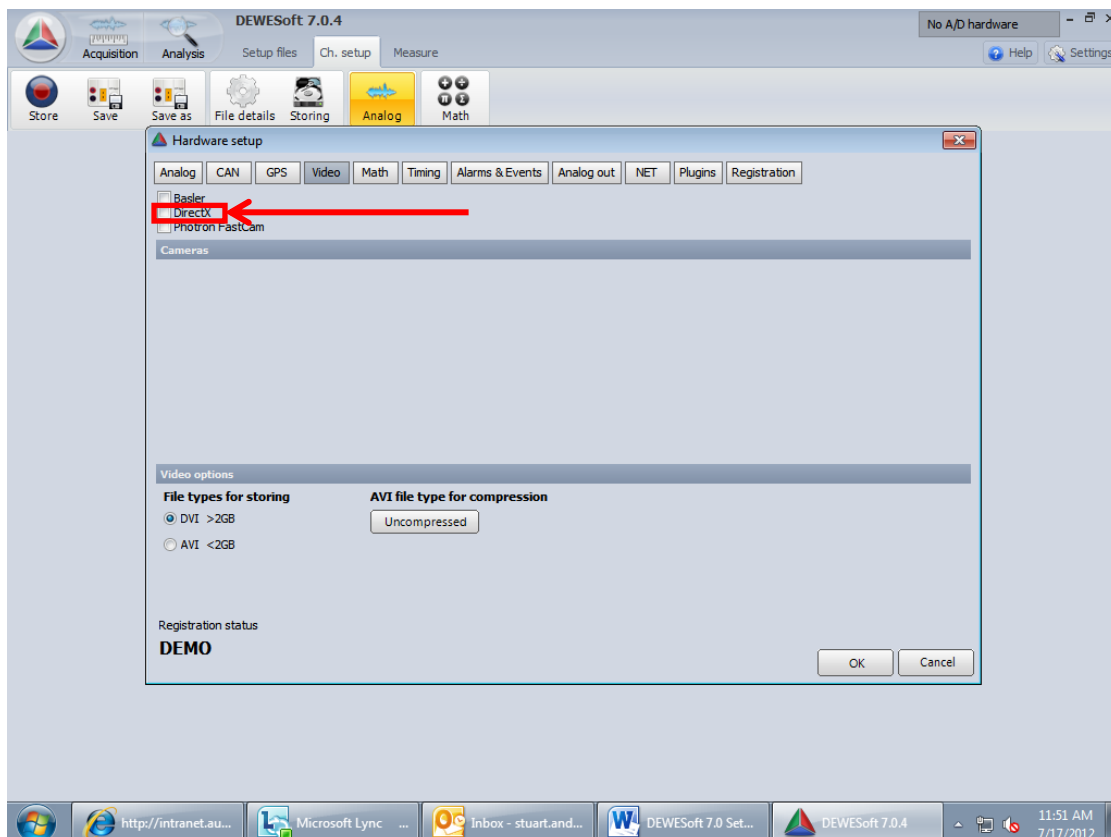
6. A drop-down menu will appear, in this menu, select “Hardware setup”.

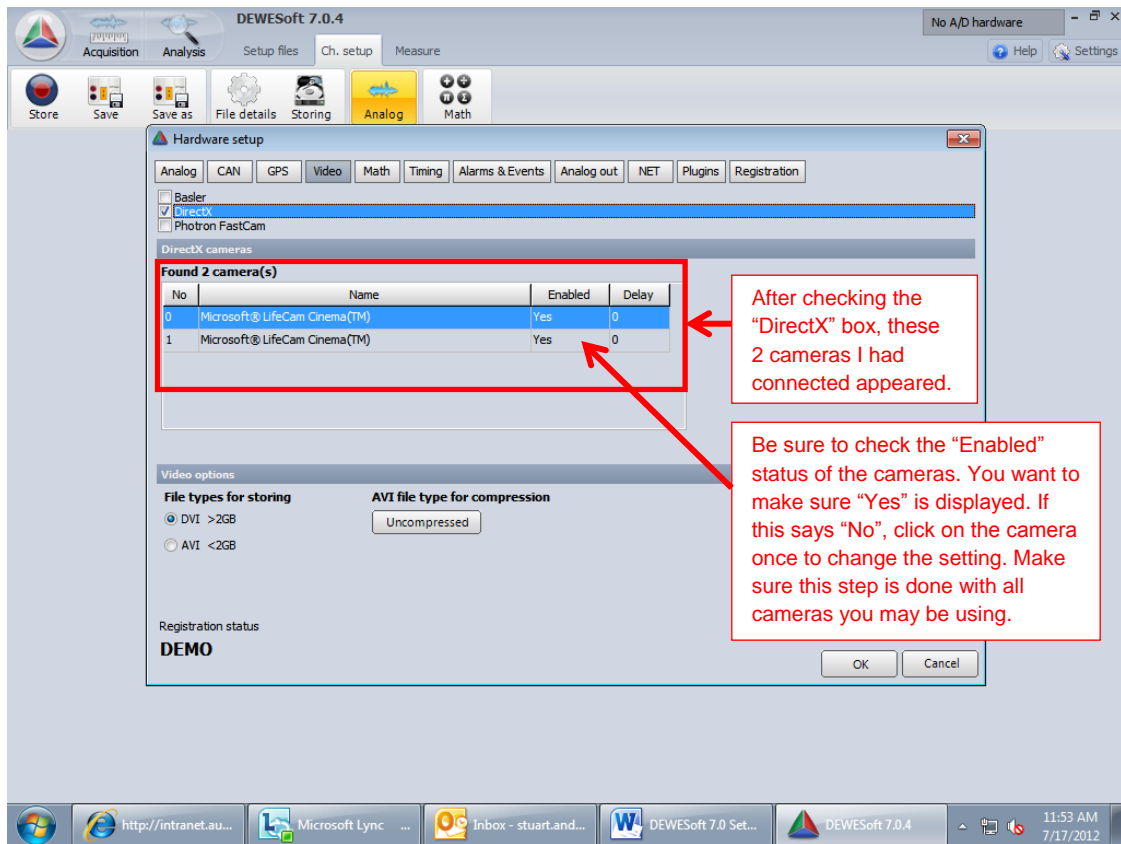


7. This screen will pop up. From here, select the “Video” tab.

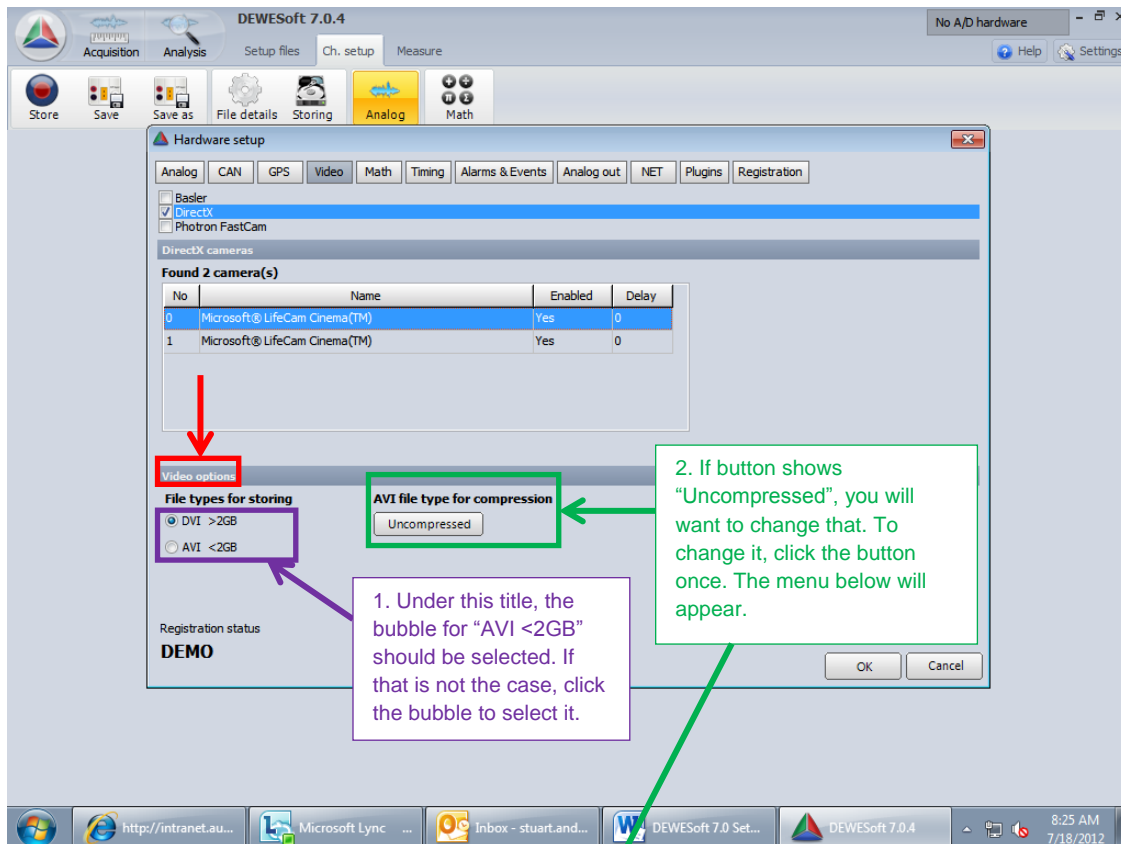


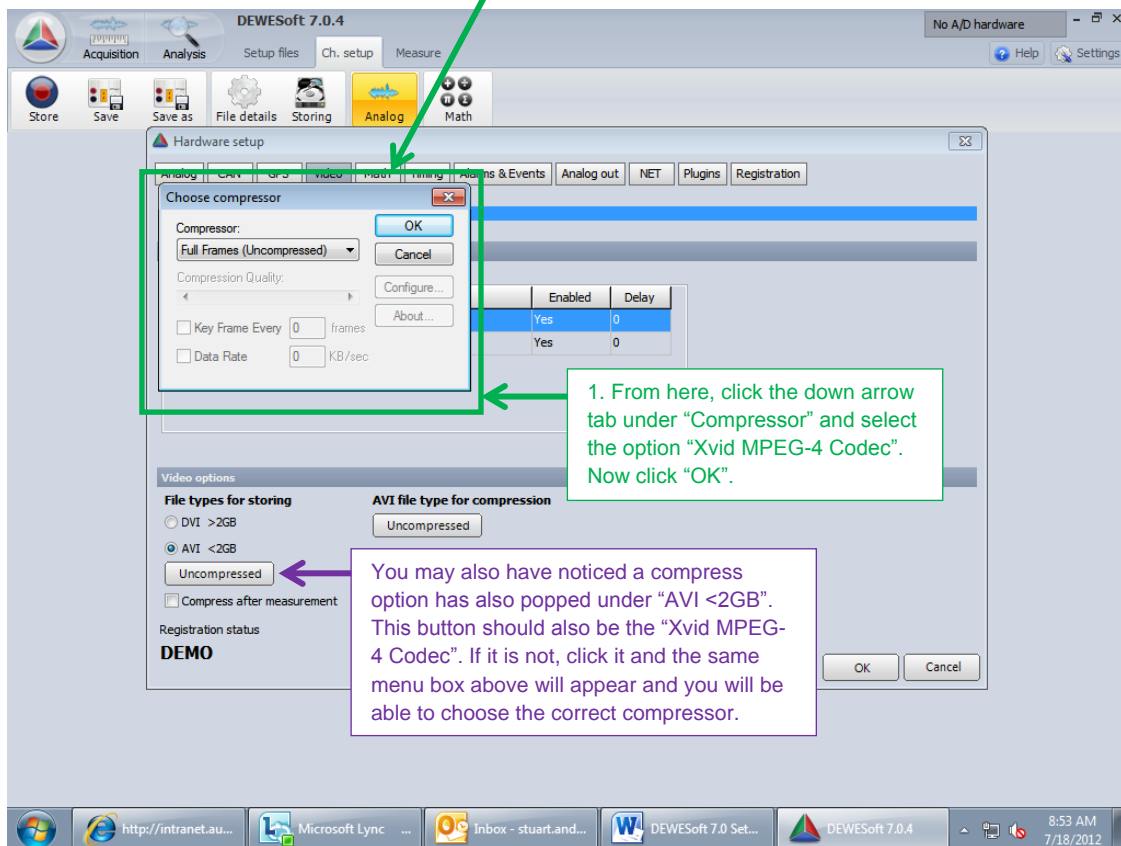
8. Before moving on, make sure you have all your cameras connected. This manual is being written assuming you will be using the Microsoft© LifeCam Cinema cameras. When you are sure everything is connected properly, check the box next to "DirectX". After checking this, the cameras that are connected should appear.



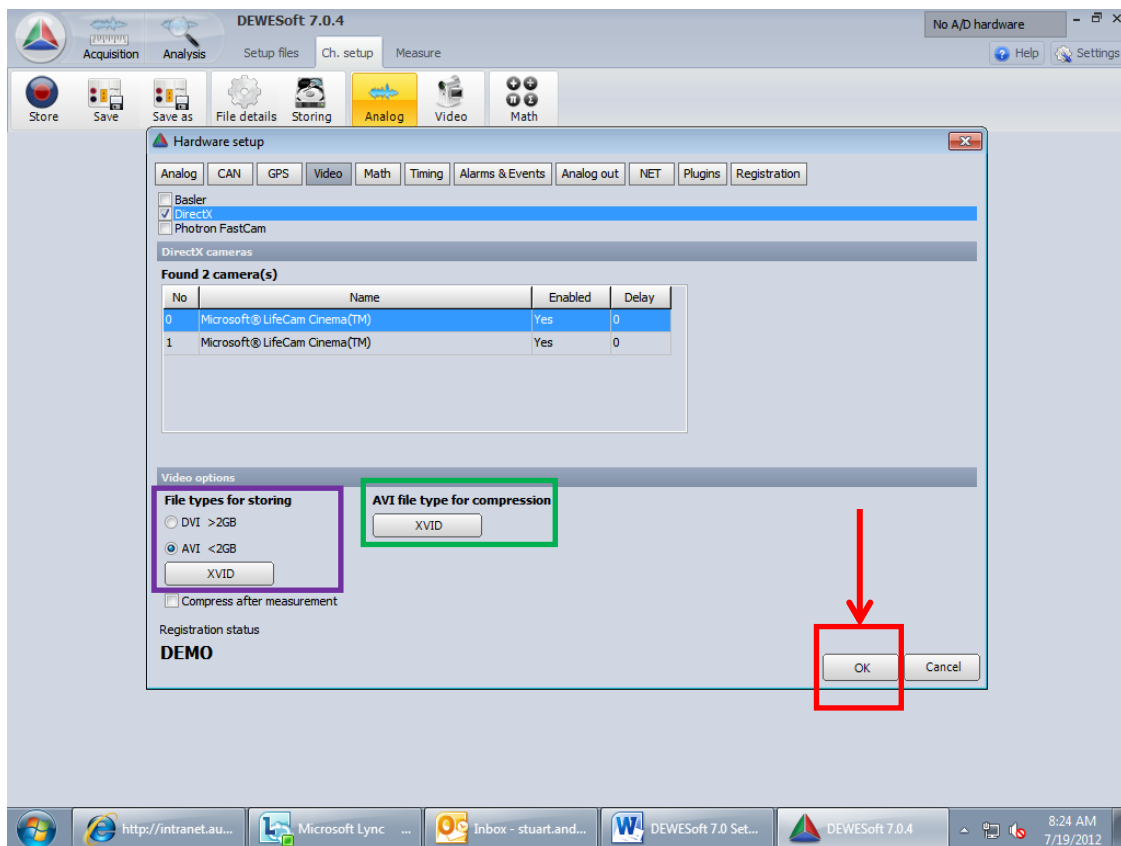


9. On this same window, you also want to double check some things in the "Video options" (Red). The first thing to check would be the "AVI file type for compression" (Green). Also, you should look at the "File types for storing" (Purple). Start first with the "File types for storing" (Purple).

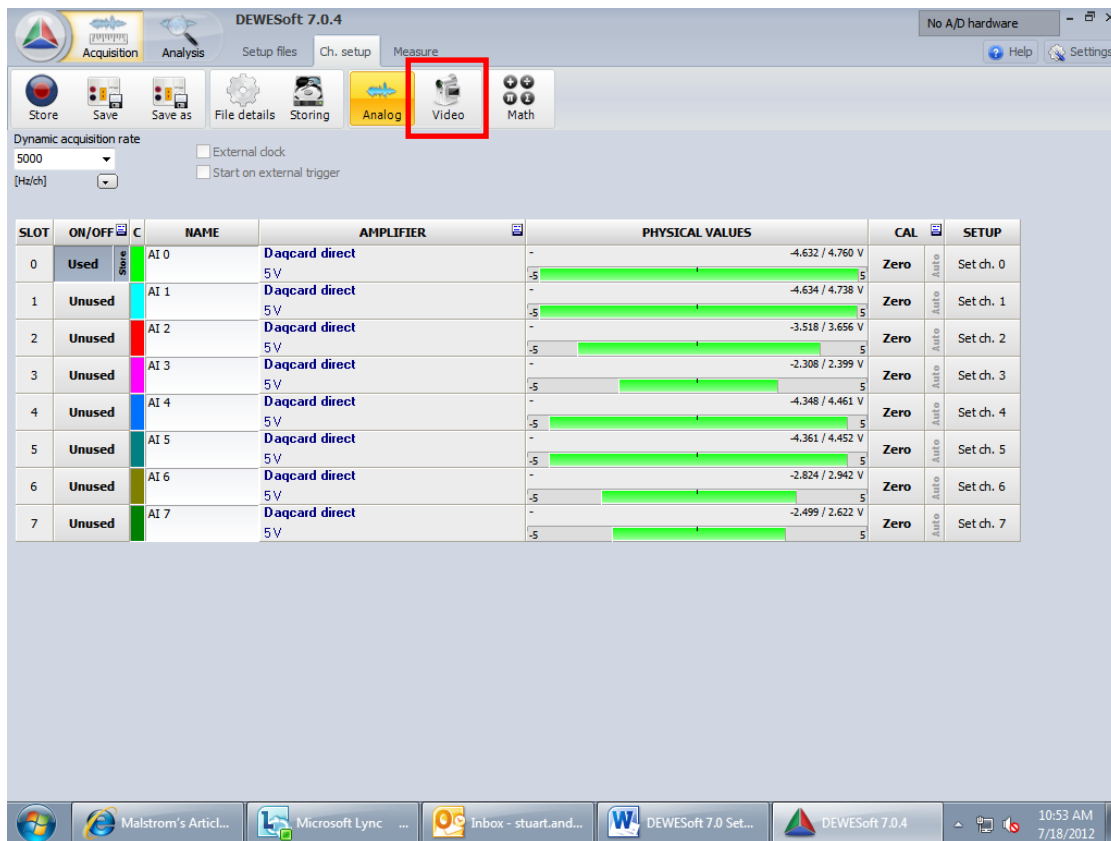




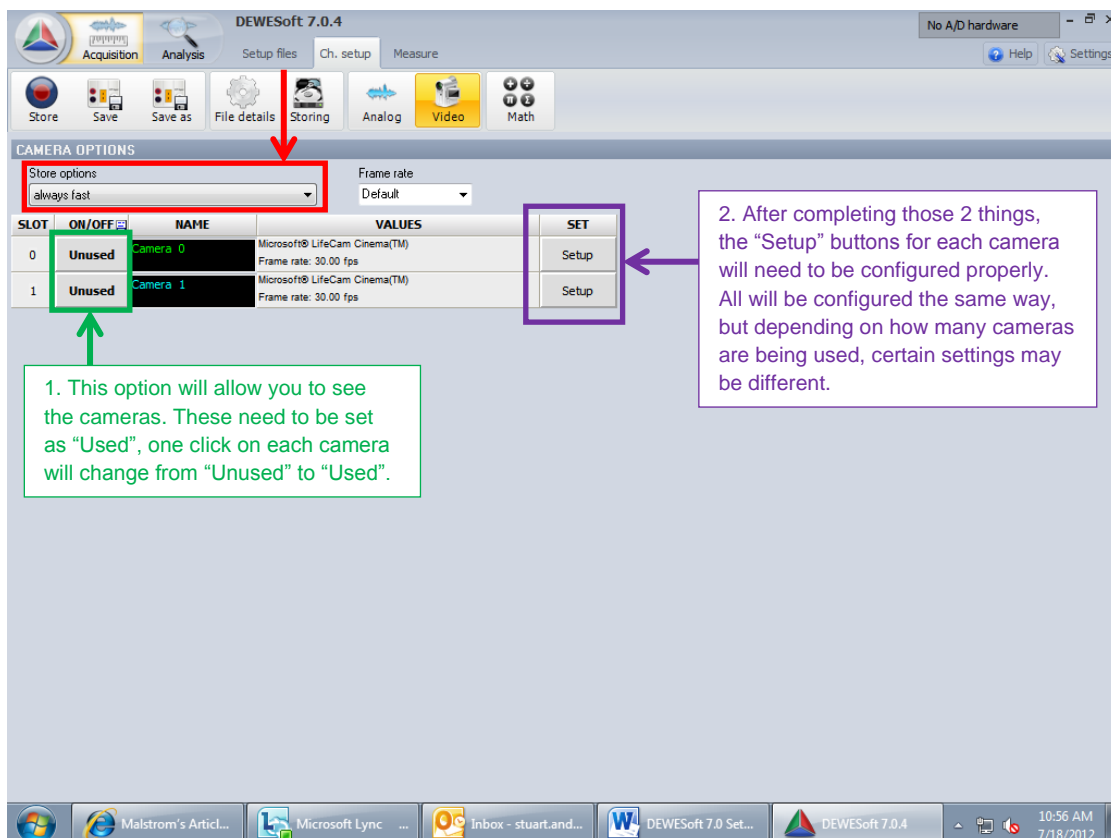
After changing both compressions, the screen below should look like this. If you look below the "AVI file type compression" (Green) label and under the "AVI <2GB" (Purple) they should now read "XVID". Your "Video -> Hardware setup" is complete. Just press the "OK" button now (Red).



10. A new “Video” tab will pop up at on the top ribbon bar. You will want to click on it.



11. Now at this point you should see the cameras that you have attached. Depending on if you are using 2 or 4 cameras, this next part will be slightly different. First under “Store options”, change the drop-down bar to the option of “fast on trigger, but slow otherwise” (Red).





12. Here is what the “Setup” for each camera will look like.

Camera 0 (Microsoft® LifeCam Cinema(TM))

Basic settings  
Camera name: Camera 0  
PREVIEW - 30.3 fps

Camera settings  
Direct setup | Dialog setup

Compression: YUY2  
Resolution: 640x480  
Frame rate: 30

Picture setup  
Pan, Tilt, Zoom, Exposure, Focus, Brightness, Contrast, Saturation, Sharpness

Custom settings

OK

1. The “Resolution” tab will be the only thing you will need to be concerned with.

For a 2 camera setup:  
Use the 640x480 resolution. This will be the default for each camera when connected, but it will be best to double check each camera for this setting.

For a 4 camera setup:  
Use the 424x240 resolution.

Do this for each camera you are using depending on the number of cameras, use the specified resolution. Click “OK” when finished.

Normally you should see the camera picture in this window. My computer is not displaying it properly, but to ensure yours is working correctly look for the video from the camera here.

13. Now that the cameras are all setup, the next thing to do is set up the CAN hardware. At this point click the “Settings” (Red) button again and click on “Hardware setup” (Green).

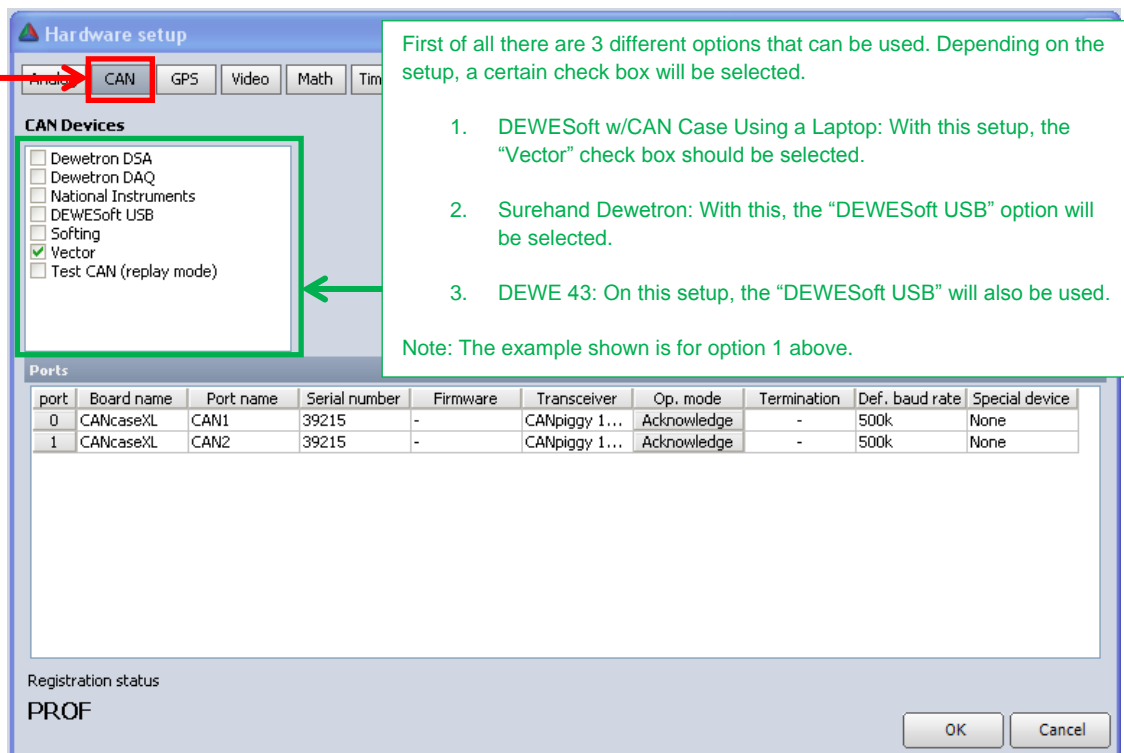
DEWESoft 7.0.4

Settings

Project  
Hardware setup ...  
Project setup ...  
Global setup ...  
Sensor editor ...  
Counter sensor editor ...  
S[] units editor ...

SLOT	ON/OFF	NAME	VALUES	SET
0	Used	Camera 0	Microsoft® LifeCam Cinema(TM) Frame rate: 30.00 fps; Reduced rate: 1.00 s	Setup
1	Used	Camera 1	Microsoft® LifeCam Cinema(TM) Frame rate: 30.00 fps; Reduced rate: 1.00 s	Setup

14. From this window, click on the “CAN” (Red) tab. Now depending on which Dewetron you are using, this next part is slightly different. The (Green) box below will explain the differences.



First of all there are 3 different options that can be used. Depending on the setup, a certain check box will be selected.

1. DEWESoft w/CAN Case Using a Laptop: With this setup, the “Vector” check box should be selected.
2. Surehand Dewetron: With this, the “DEWESoft USB” option will be selected.
3. DEWE 43: On this setup, the “DEWESoft USB” will also be used.

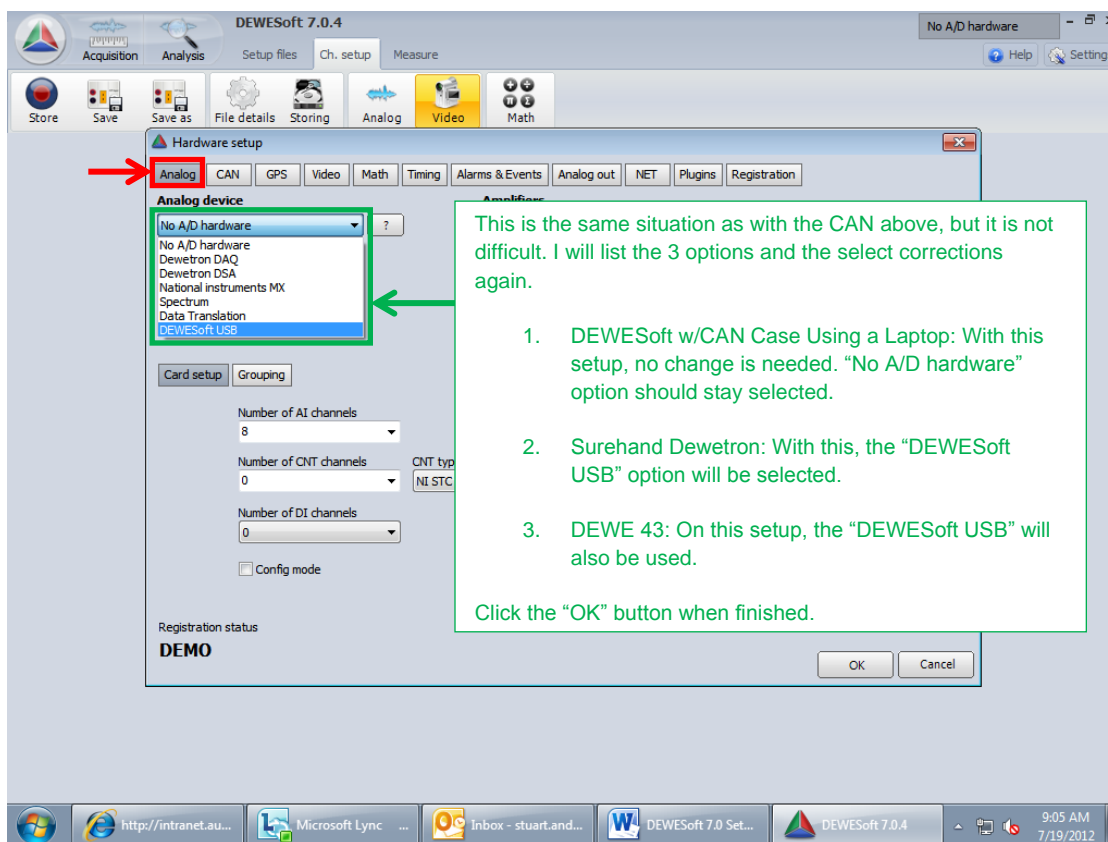
Note: The example shown is for option 1 above.

port	Board name	Port name	Serial number	Firmware	Transceiver	Op. mode	Termination	Def. baud rate	Special device
0	CANcaseXL	CAN1	39215	-	CANpiggy 1...	Acknowledge	-	500k	None
1	CANcaseXL	CAN2	39215	-	CANpiggy 1...	Acknowledge	-	500k	None

Registration status  
**PROF**

OK Cancel

15. That takes care of the CAN hardware. Now select the “Analog” (Red) tab to the left of the “CAN” tab.



This is the same situation as with the CAN above, but it is not difficult. I will list the 3 options and the select corrections again.

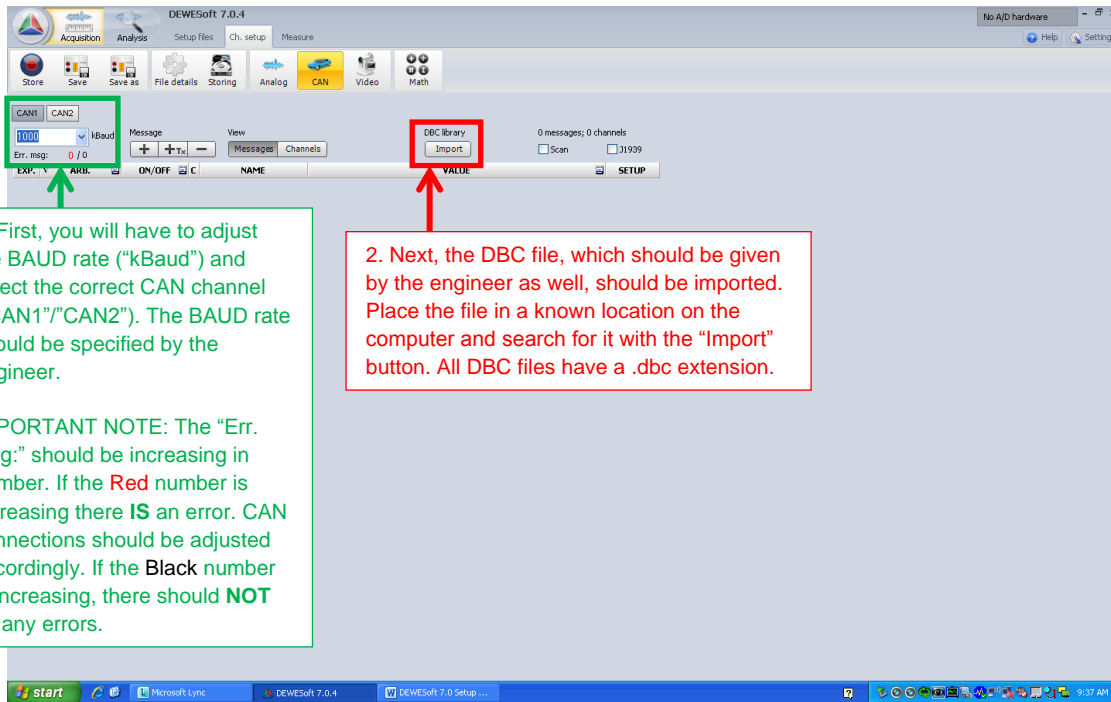
1. DEWESoft w/CAN Case Using a Laptop: With this setup, no change is needed. “No A/D hardware” option should stay selected.
2. Surehand Dewetron: With this, the “DEWESoft USB” option will be selected.
3. DEWE 43: On this setup, the “DEWESoft USB” will also be used.

Click the “OK” button when finished.

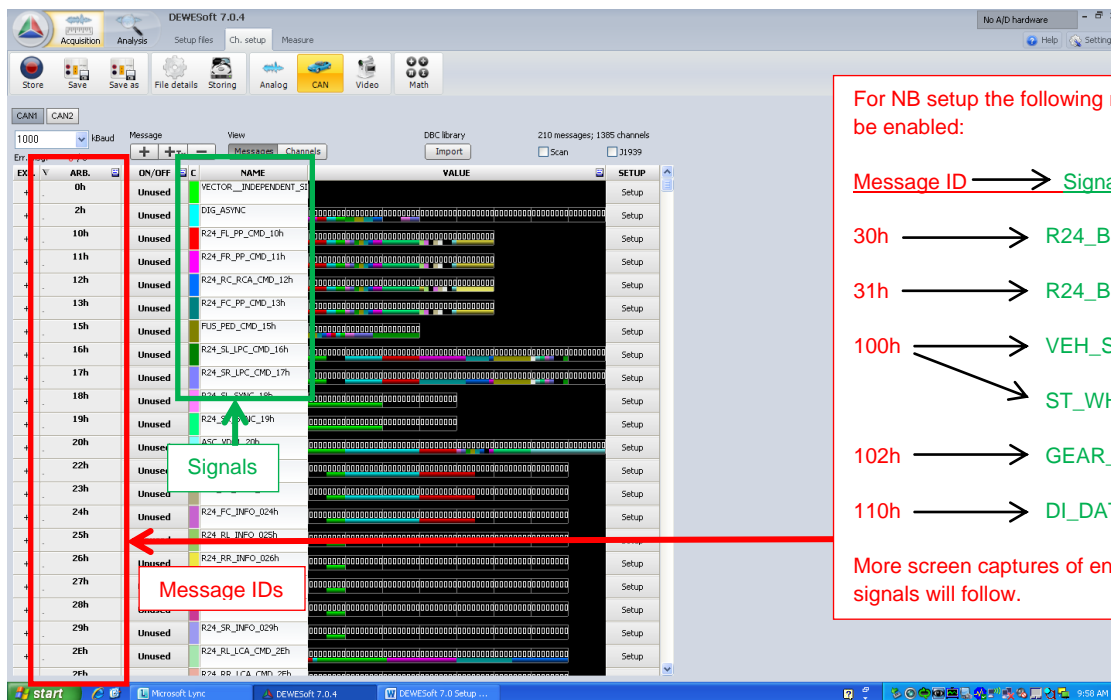
Registration status  
**DEMO**

OK Cancel

16. Now a new ribbon tab will appear on the top labeled “CAN”. Select this tab.



17. After loading the DBC file, many different messages will appear (As shown below). Message configuration is the next step. The example being used is for a Narrow Band (NB) setup configuration. This next step may be confusing, but I will explain very thoroughly the steps to go about. All of these message IDs should be specified by the engineer and then signals within those message IDs will be activated accordingly.



18. The next few pictures show the complete activation process of the messages and the signals.

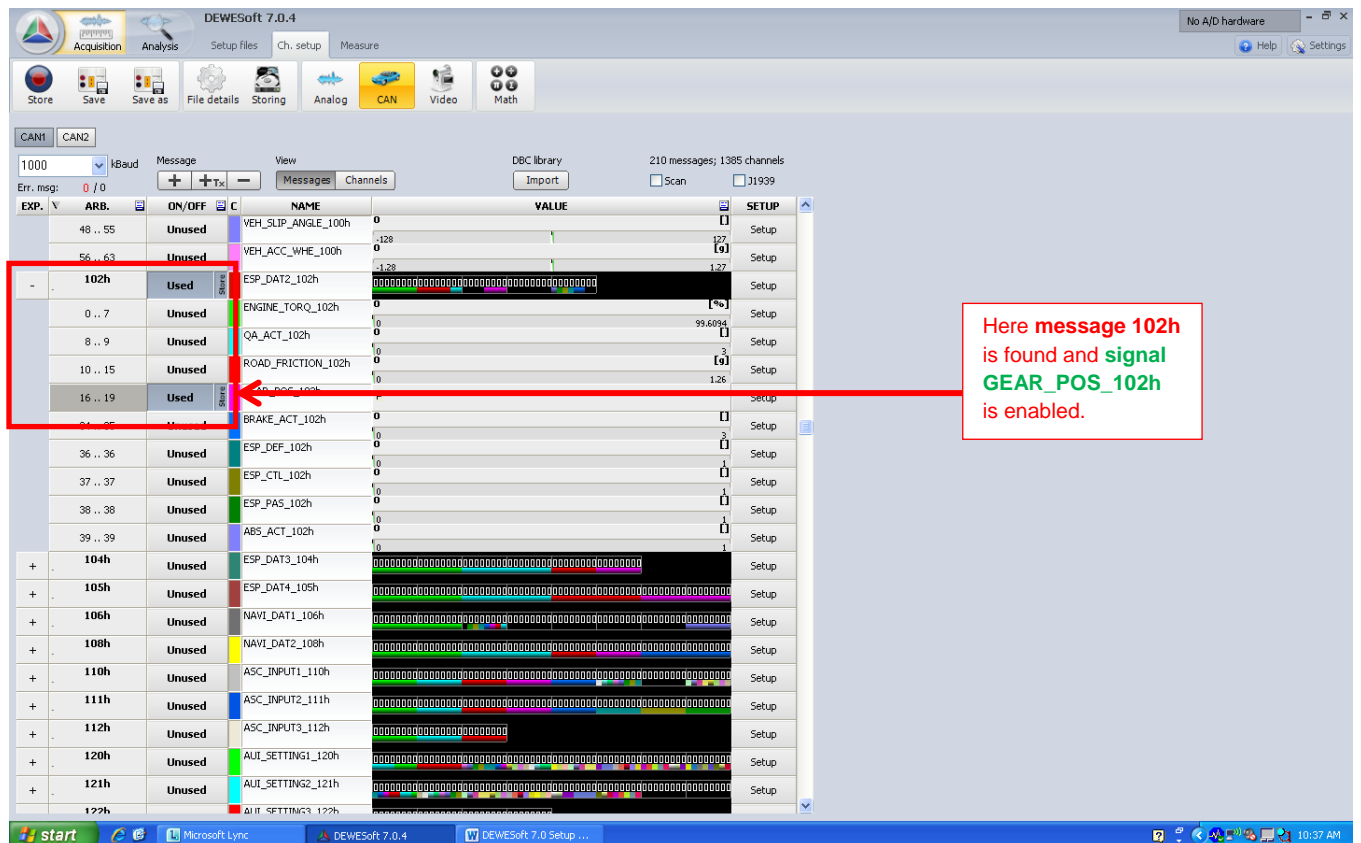
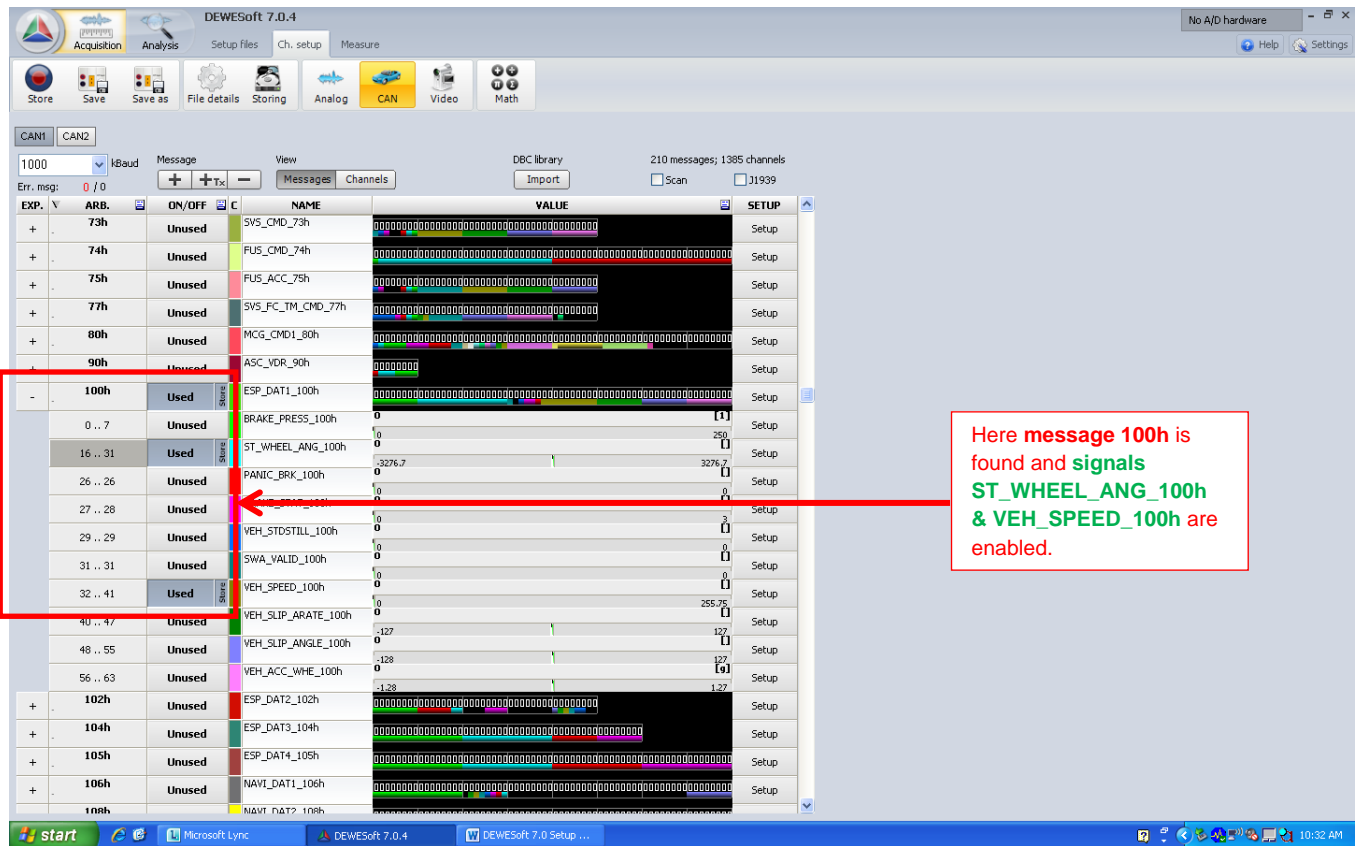
The screenshot shows the DEWESoft 7.0.4 interface. The 'Messages' tab is active, displaying a list of messages. Message 30h is highlighted with a red box. A red arrow points to the plus sign to the left of message 30h, which opens a dropdown menu. The dropdown menu shows the signal 'R24\_BSD\_WARN\_1\_30h' is enabled.

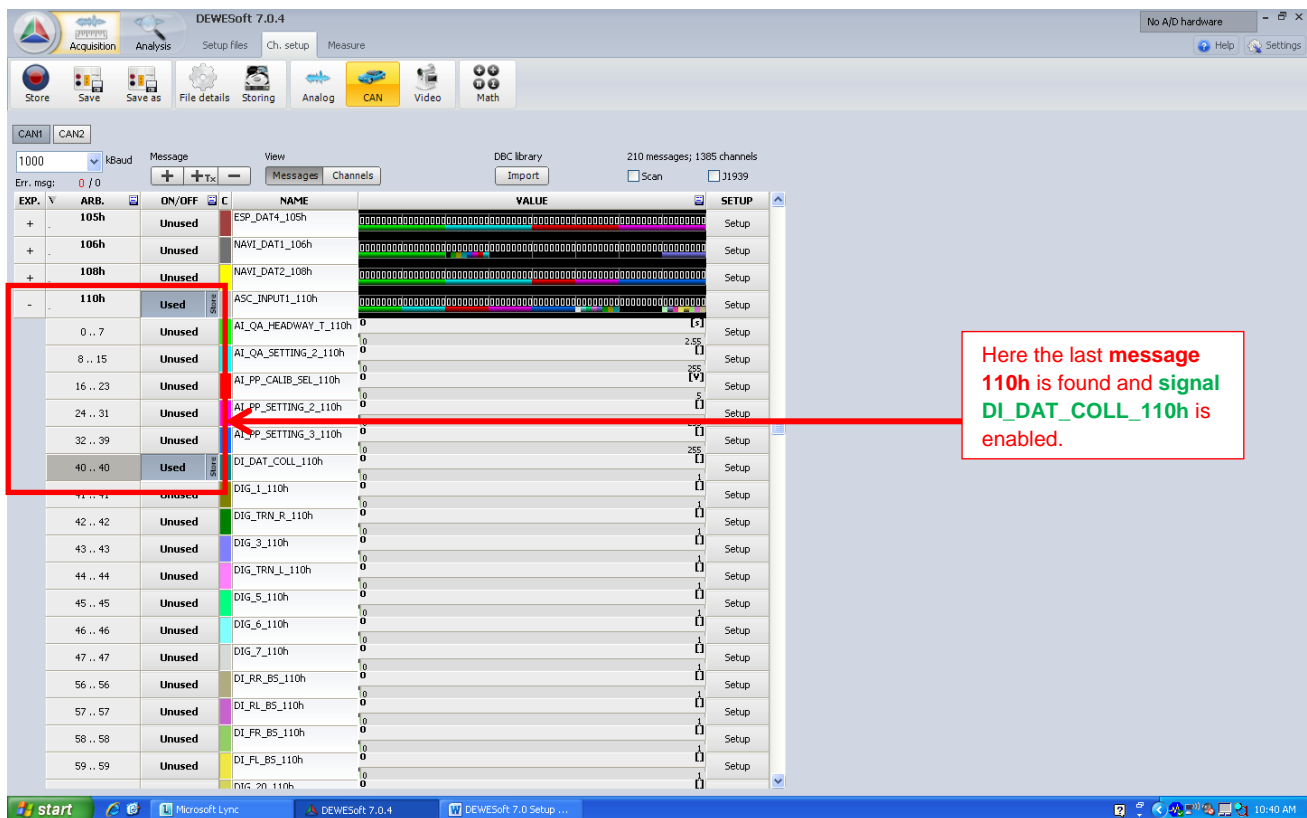
Here message 30h is found and signal R24\_BSD\_WARN\_1\_30h is enabled.

The plus sign to the immediate left of the message will give the drop down menu of signals to select/enable. Just click once on "Unused" to enable the signals, just like with the cameras earlier.

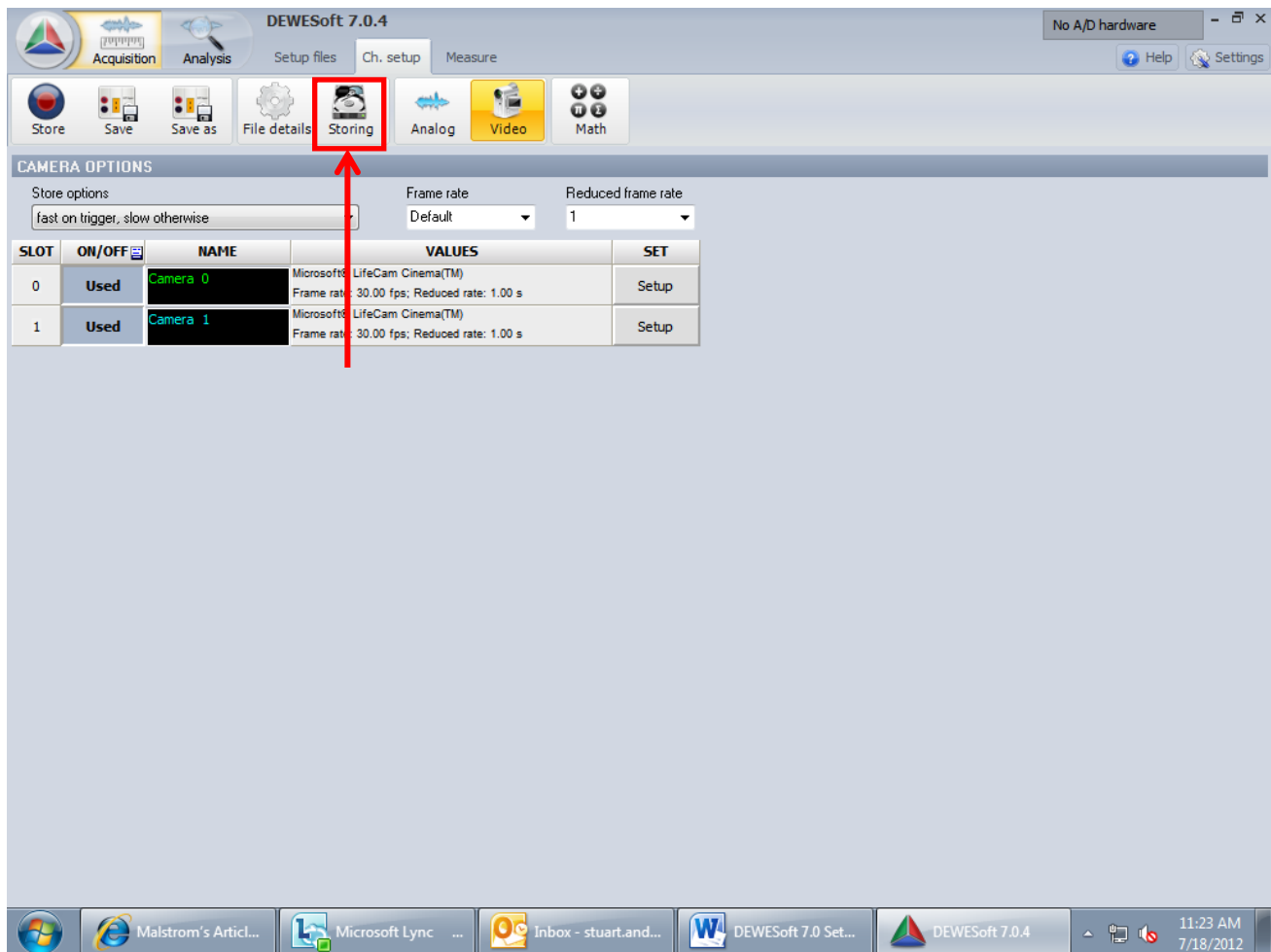
The screenshot shows the DEWESoft 7.0.4 interface. The 'Messages' tab is active, displaying a list of messages. Message 31h is highlighted with a red box. A red arrow points to the plus sign to the left of message 31h, which opens a dropdown menu. The dropdown menu shows the signal 'R24\_BSD\_WARN\_1\_31h' is enabled.

Here message 31h is found and signal R24\_BSD\_WARN\_1\_31h is enabled.

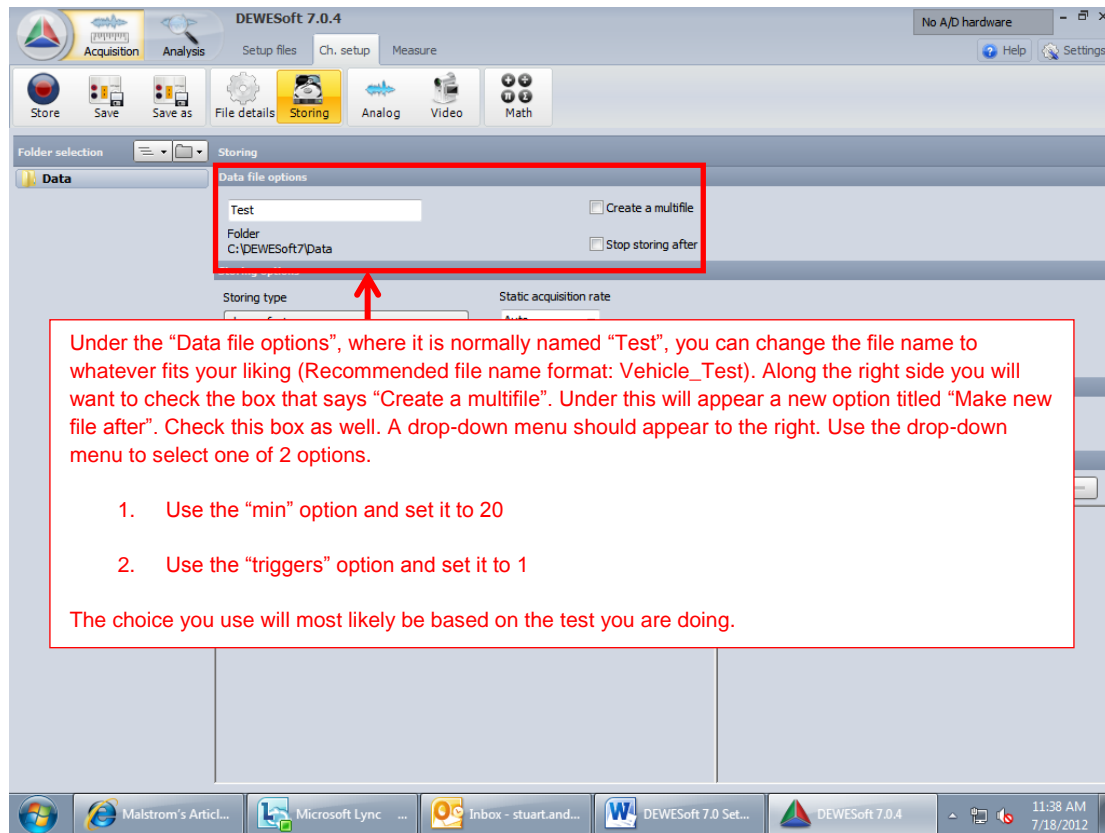




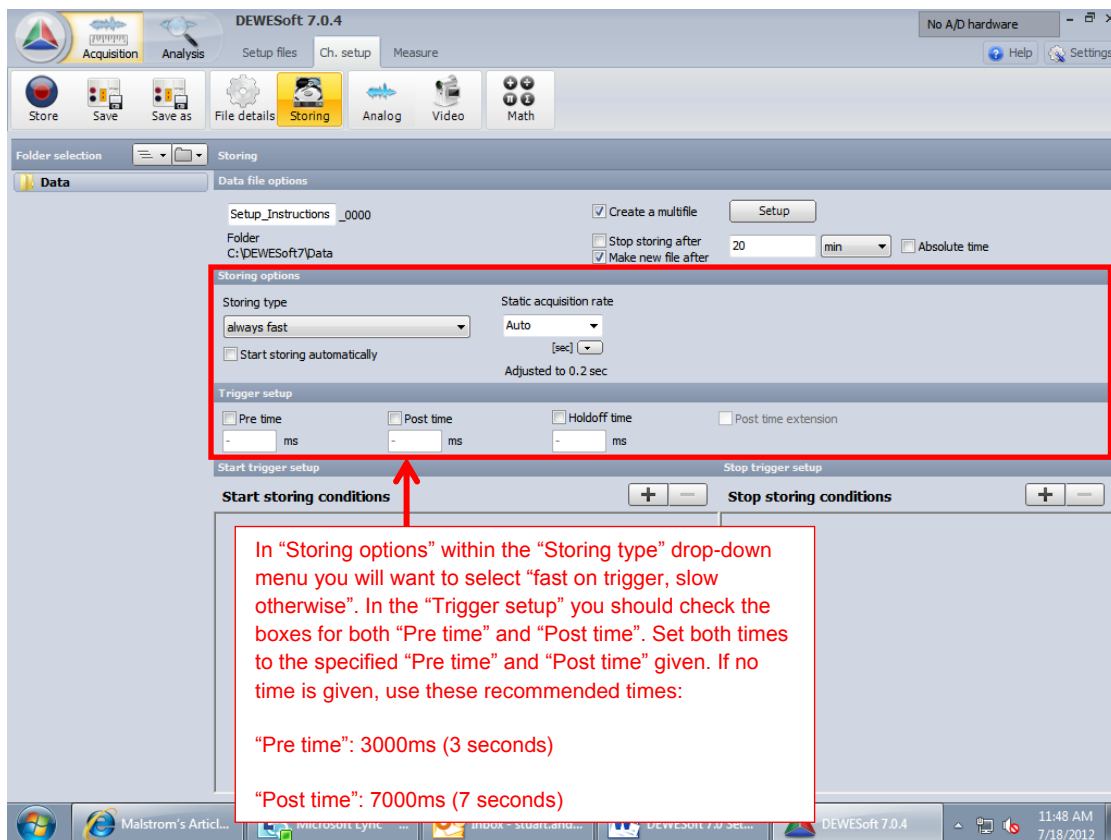
19. Now you will want to click the “Storing” tab located on the top ribbon.



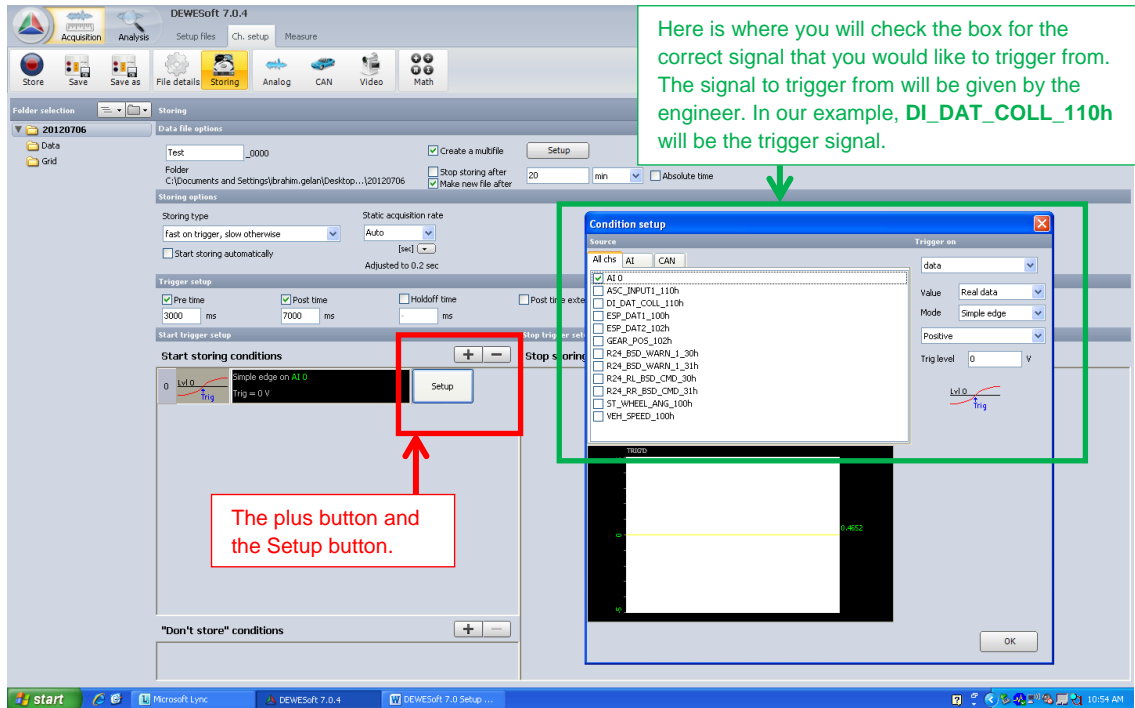
20. Here is what the screen will look like.



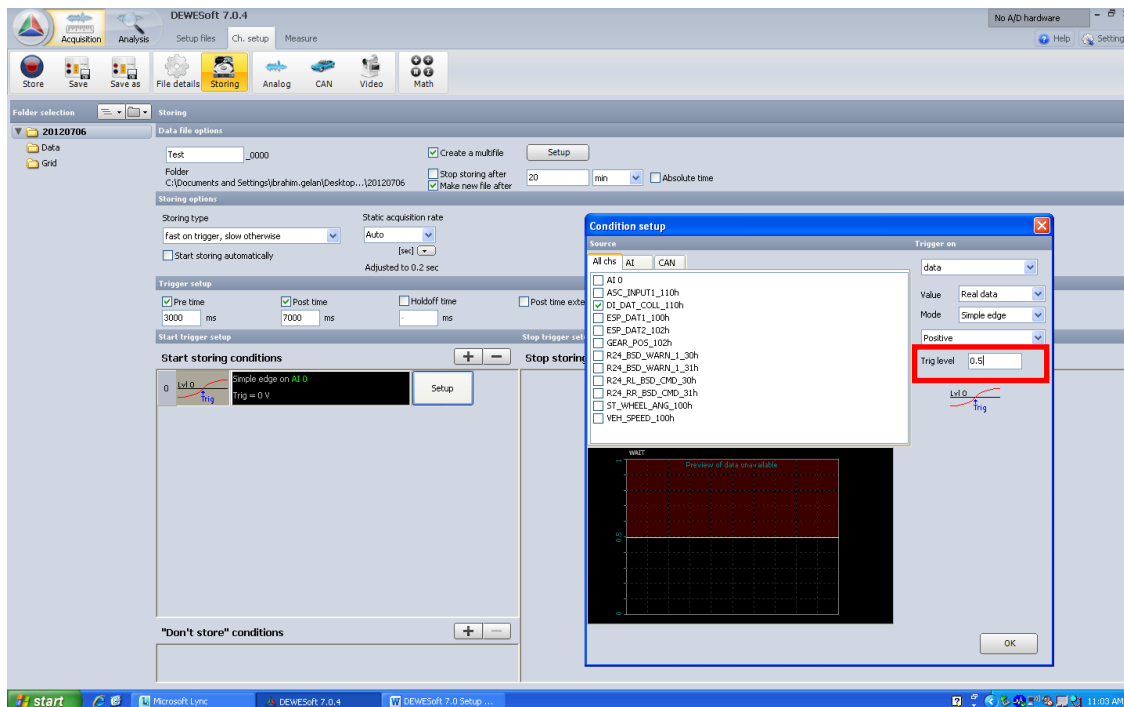
21. The screen below should look like this after completing the above tasks. Next are the "Storing options" and "Trigger setup" which are underneath the "Data file options".



22. The next step is the “Start trigger setup”. Under that title you will need to configure the “Start storing conditions”. Use the plus button to the right to add a condition and then click the “Setup” button on the condition.

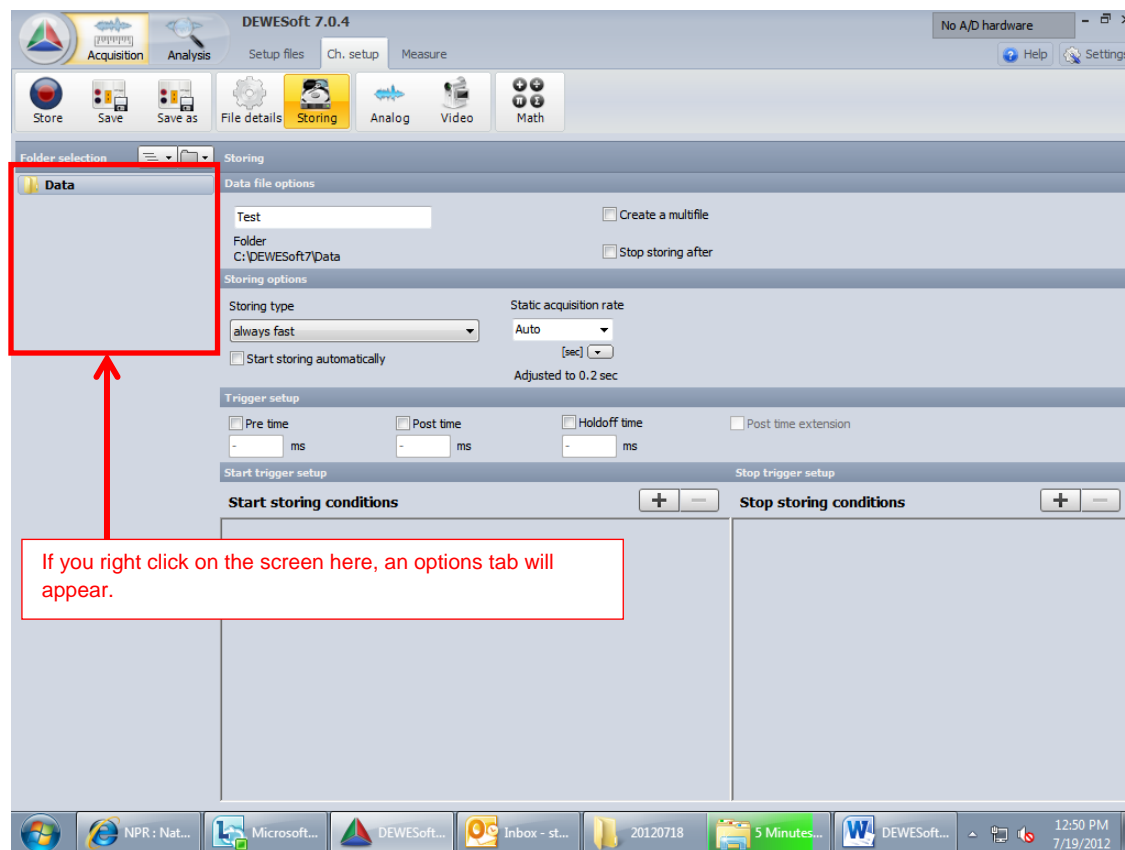


23. Now that **DI\_DAT\_COLL\_110h** is selected, the “Trig level” (Red) needs to be set. A value of 0.5 is recommended unless otherwise specified by the engineer. This finishes the trigger conditions.

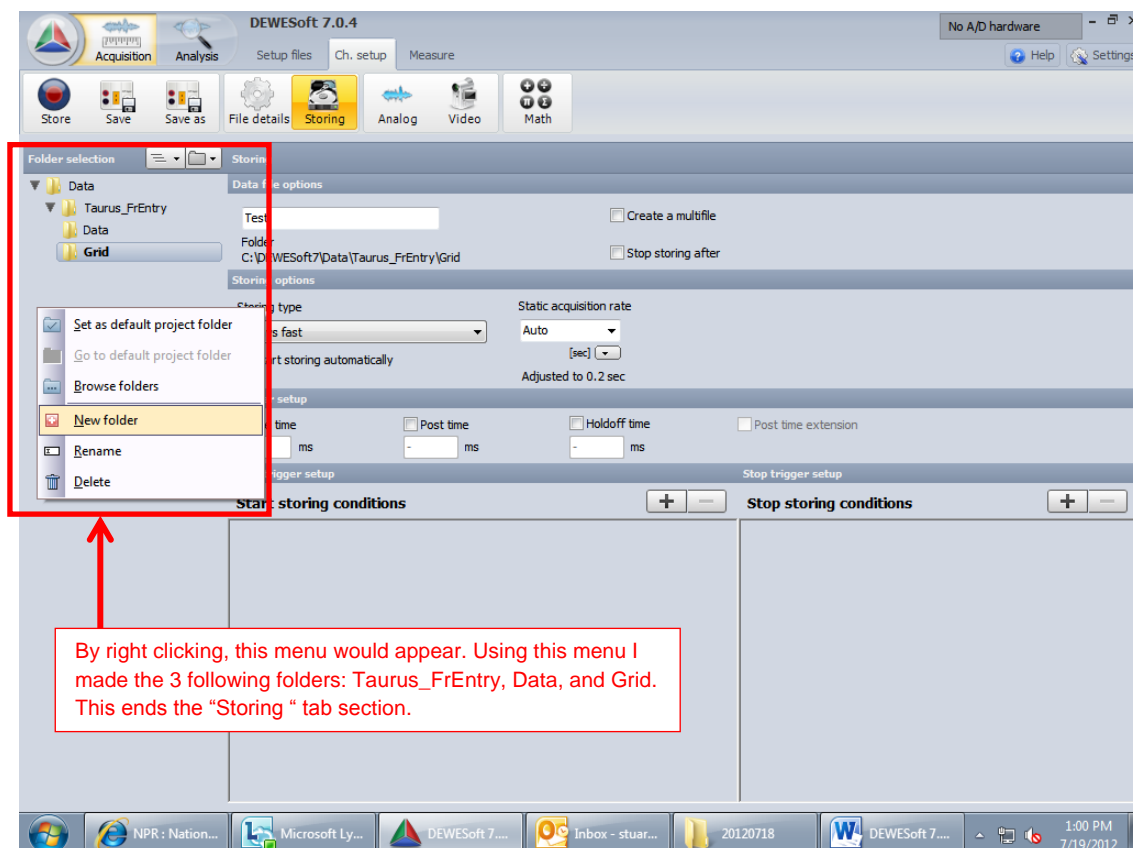




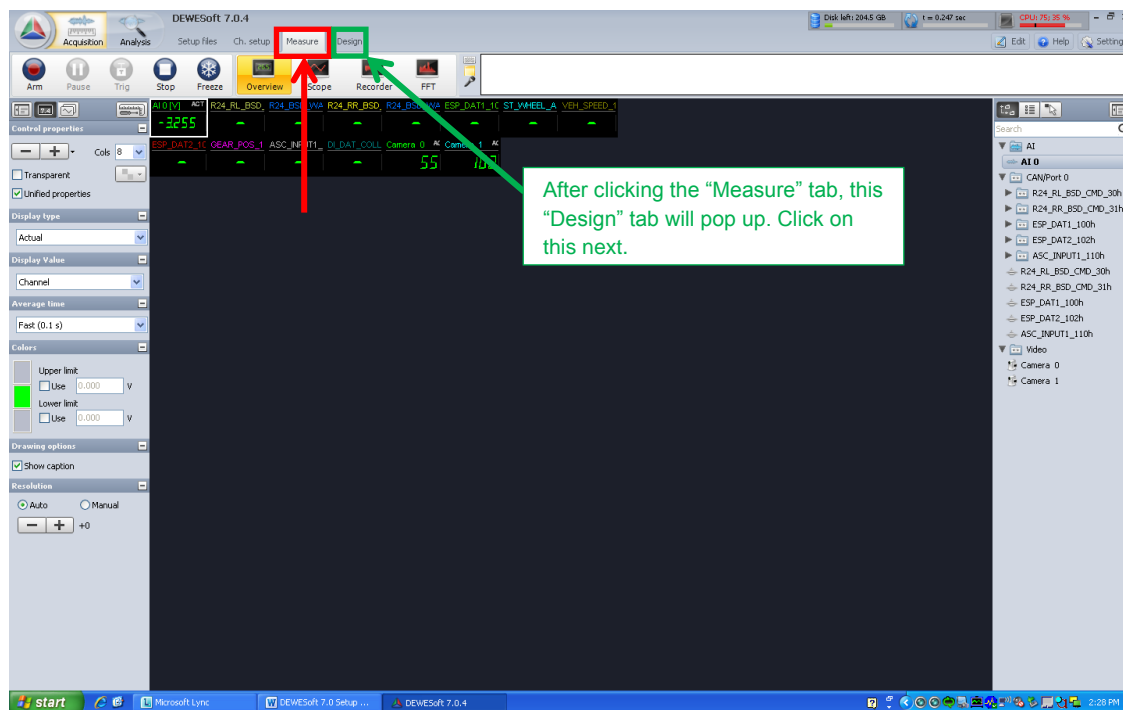
24. The last thing to do in the “Storing” tab is create folders to store your test data.



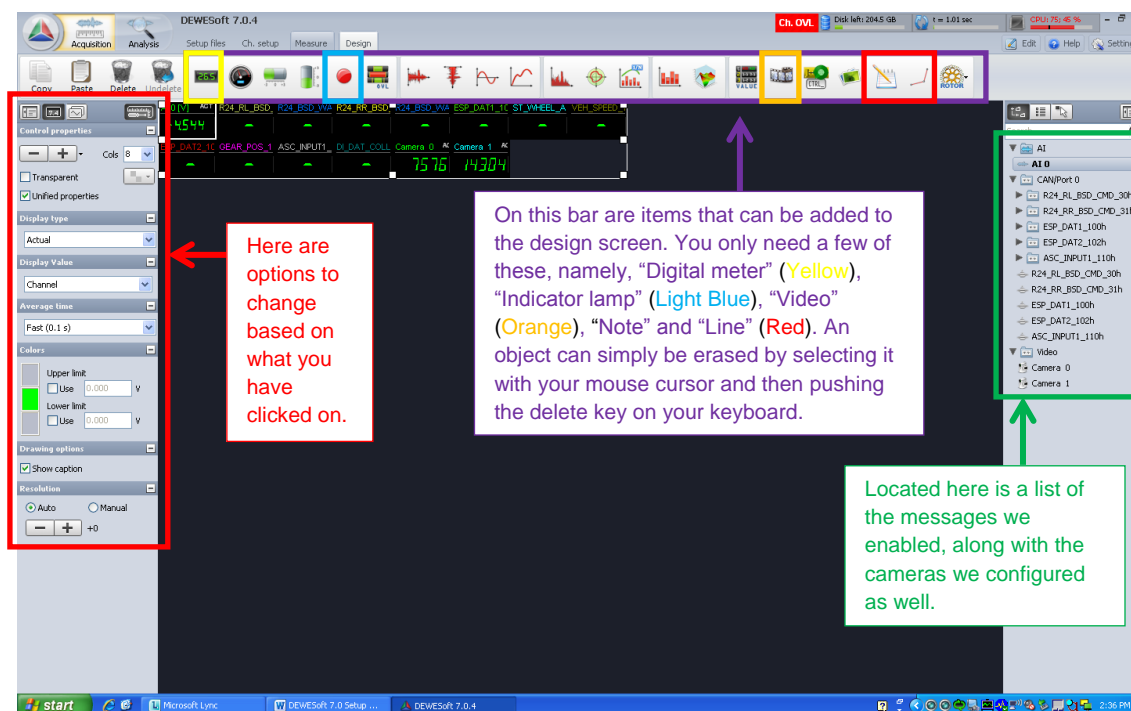
25. From here you will want to name the folder. The recommended naming for the folder is: VehicleName\_Date\_TestName. Within this folder you will want to make 2 more folders. These 2 folders should have the names: Data and Grid.



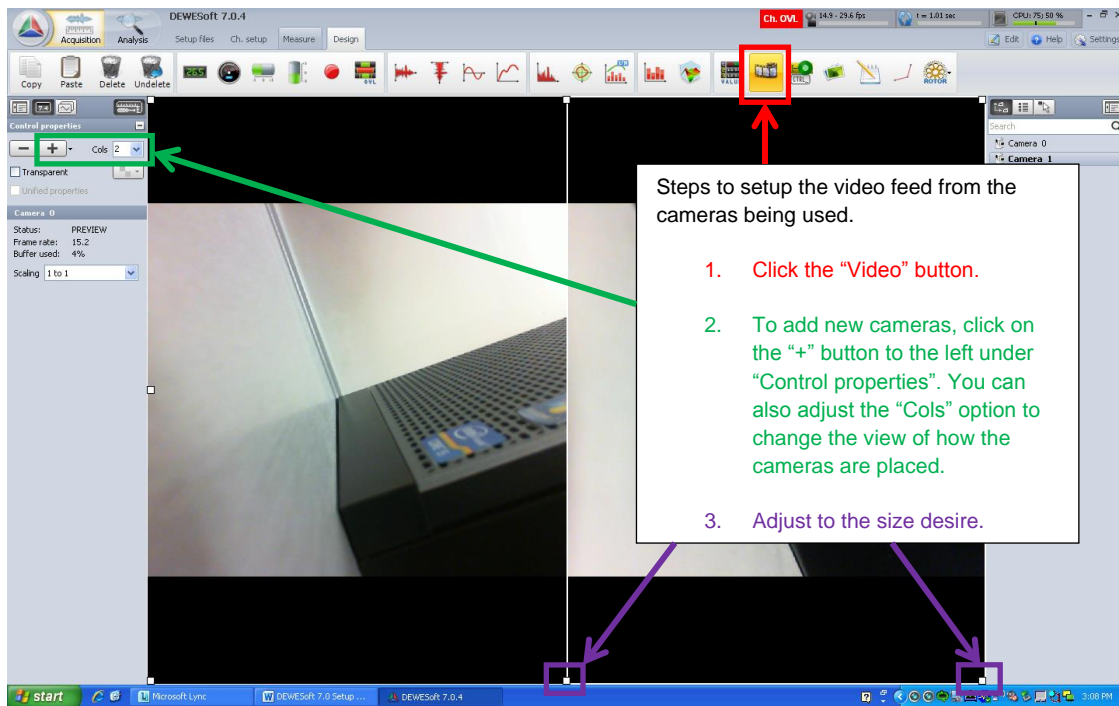
26. Next we will want to setup up the “Measure” tab on the top ribbon bar.



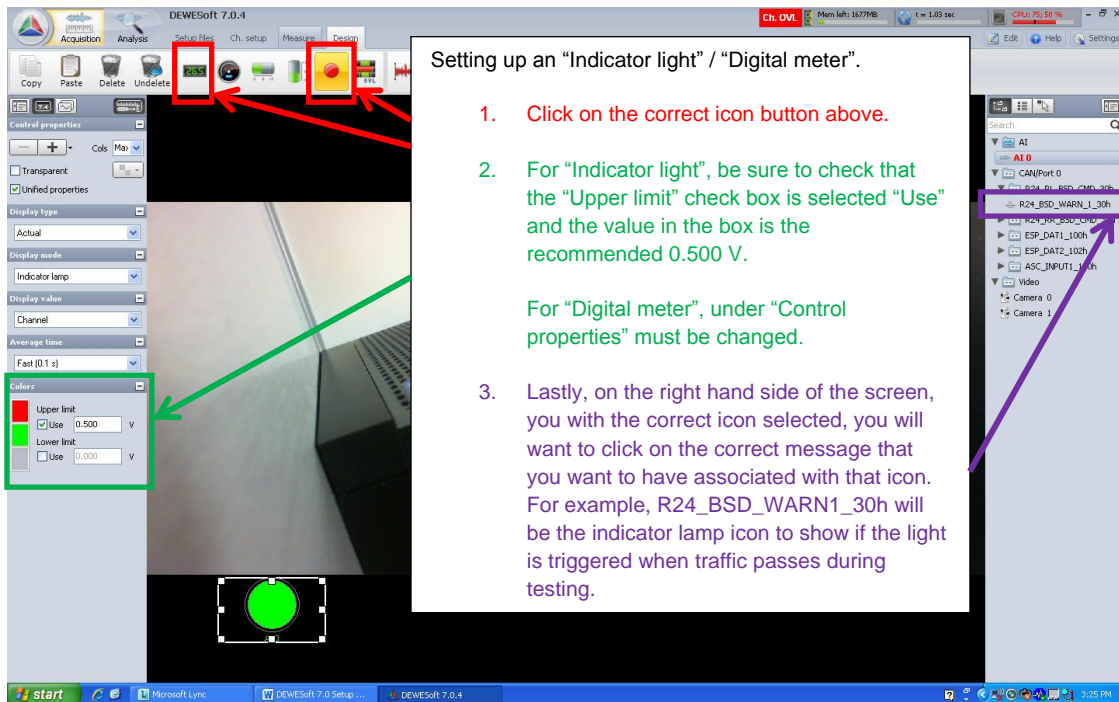
27. From here you see this screen. This is where you will design layout and messages you would like to see displayed as well as the picture for the cameras being used for the test. The next few screenshots will step you through the process of creating your layout.



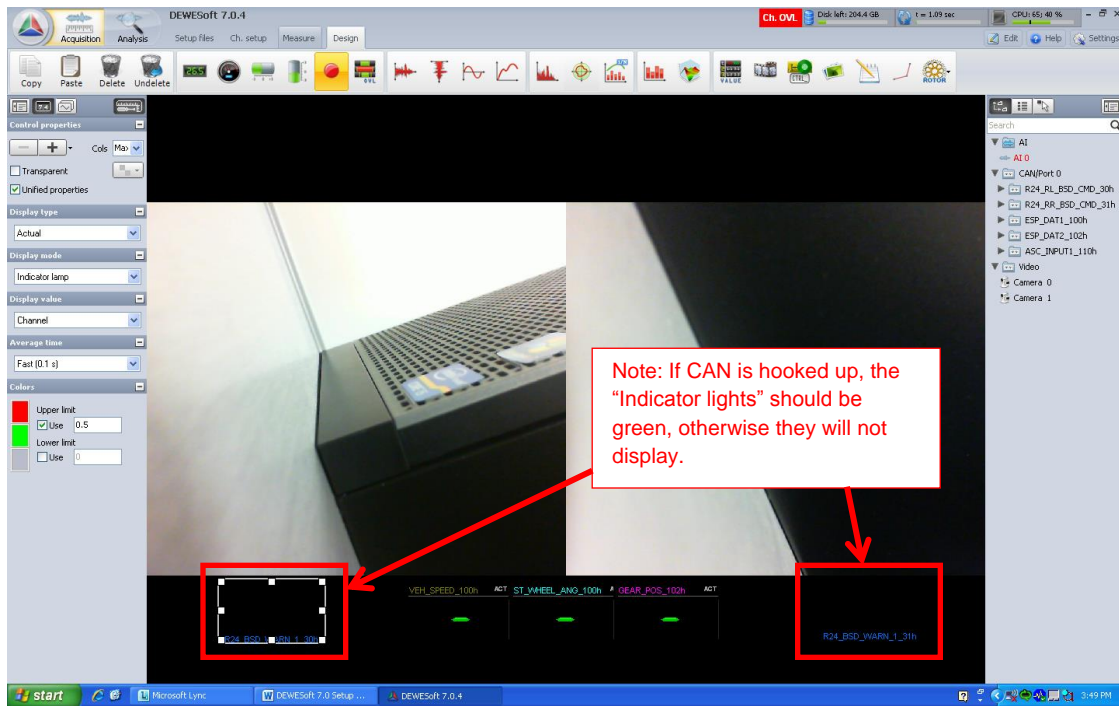
Say, first you want to configure the camera screens. First you will select the “Video” button above.



Next we will setup an indicator lamp. This process is essentially the same digital meters as well.



After configuring all of the icons that you have created, your screen should look something like this. See below.



28. This next section has to do with the Grid folder we created. You will have to make a Grid setup and save it for reference and also to get accurate readings when analyzing data. The Grid will use the last 2 icons, "Note" and "Line". The Grid is very important.





DEWESoft - Datafile: RT500001\_2012\_06\_01\_110103.d7d

Line settings:

- Color: Red
- Style: Solid
- Width: 3
- Arrows: Begin (arrow), End (arrow)
- Shape: Closed, Filled

We will start with creating the lines for the Grid using the "Line" icon. After clicking on the icon, click wherever you would like to place the base of the line. You will then be able to move your cursor and produce a line to your liking. The default settings for the line are on the left. You can change these options by selecting the drop-down arrows of the setting you wish to change.

It is recommended using Red for the "Color" option of the 3 meter line out from the vehicle and also for the 3 meter line from the back of the car.

Green should be used for the "Color" option of all other lines on the Grid.

"Width" should be the smallest line size possible and "End" should be changed from an arrow to the "Begin" option.

After drawing out the lines you probably will have something like this.

DEWESoft - Datafile: RT500001\_2012\_06\_01\_110103.d7d

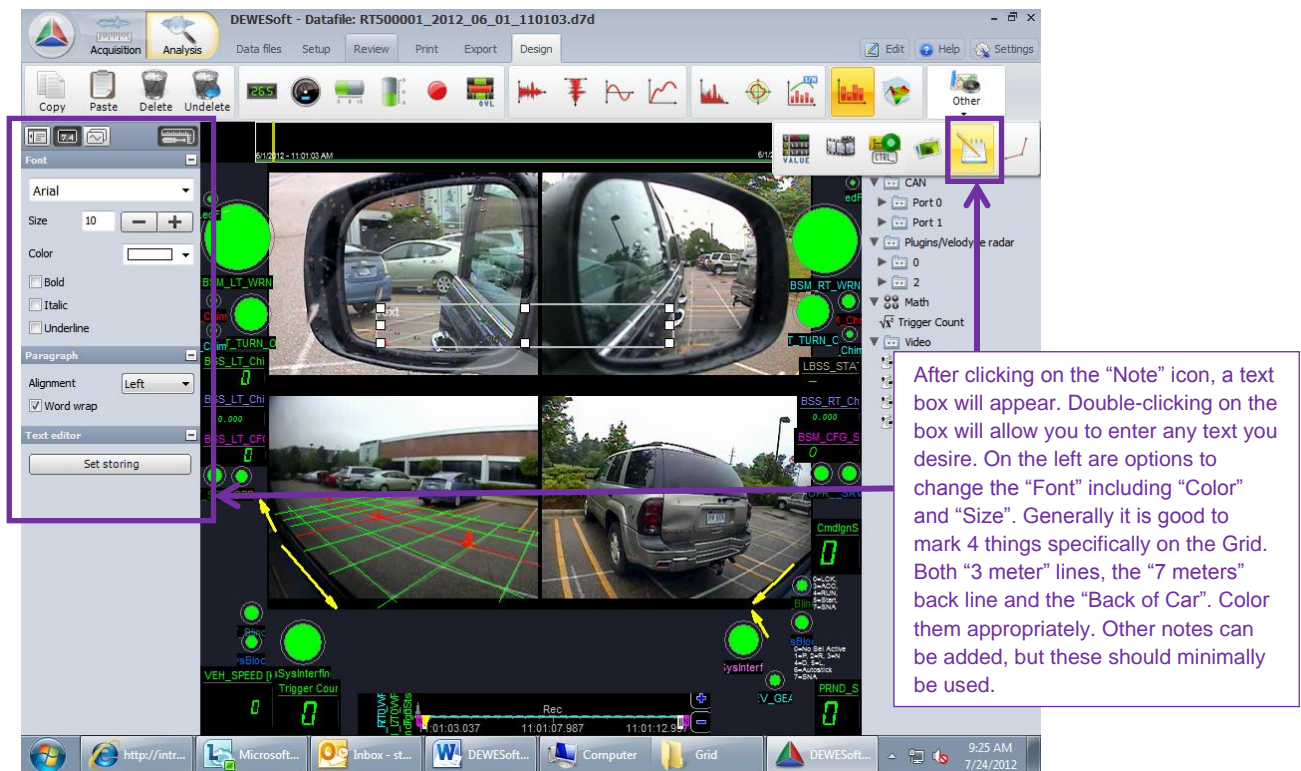
Line settings:

- Color: Red
- Style: Solid
- Width: 3
- Arrows: Begin (arrow), End (arrow)
- Shape: Closed, Filled

Search:

- CAN
- Port 0
- Port 1
- Plugins/Velodyne radar
- 0
- 2
- Math
- Trigger Count
- Video
- Camera 0
- Camera 1
- Camera 2
- Camera 3

The other camera should then be setup the same way. The next thing to do after the lines is use the "Note" icon to label the lines.



After adding those, it should look something like this.



Complete this for the other side as well and you should now have a completed Grid.

29. This ends the normal creation of a DEWESoft 7.0 setup file. You may need to use different options or select different messages, but the overall process should be the same.