Application Note:

DEWESoft 7.0 Test Setup Procedure

Stu Andrzejewski

ECE 480

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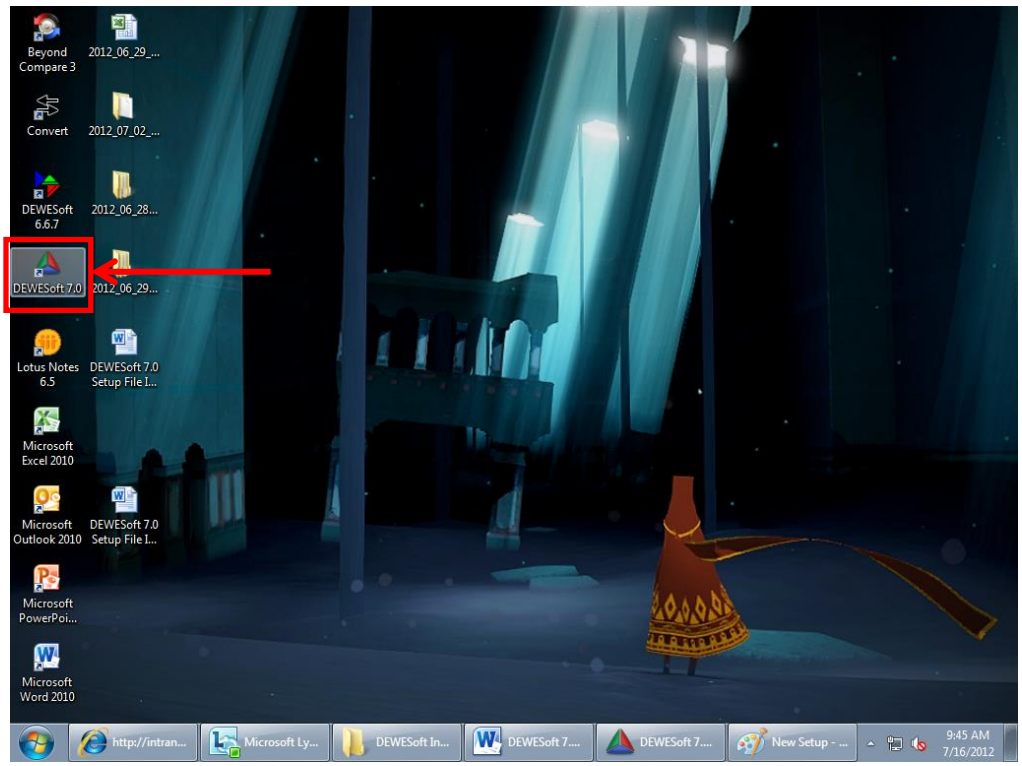
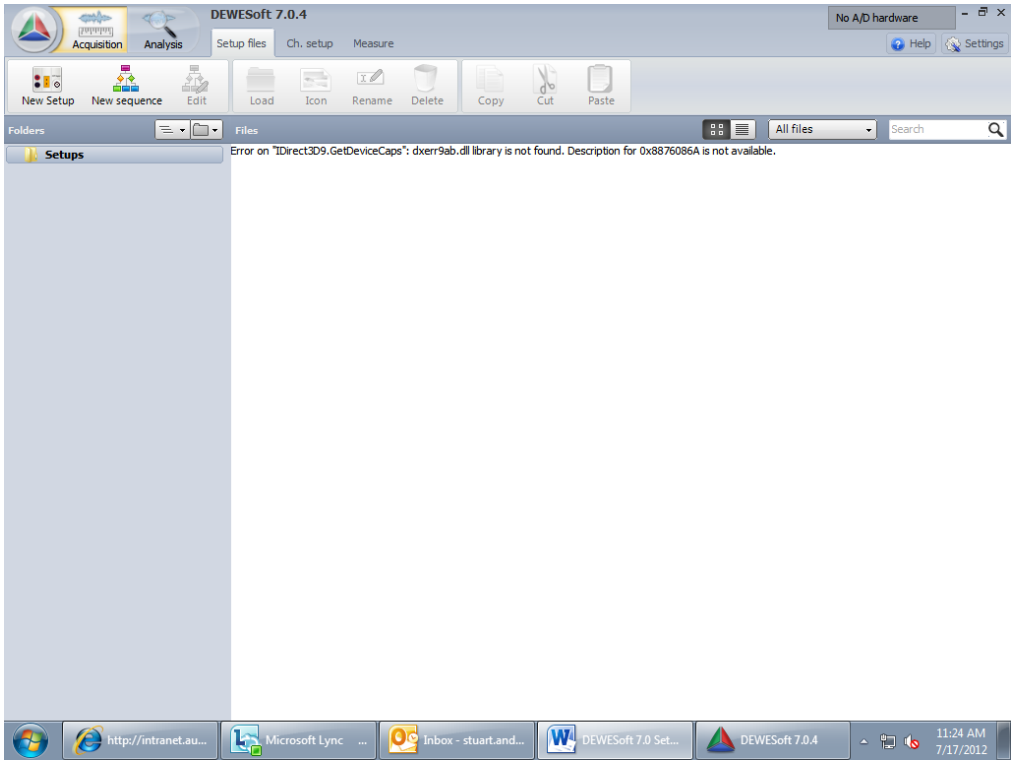
Abstract: This document provides step by step instructions on how to configure the DEWESoft vehicle CAN software program in order to specifically run tests for Blind Spot Monitoring (BSM) on automobiles. BSM is a newly emerging technology for increased safety in vehicle travel and further implementation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

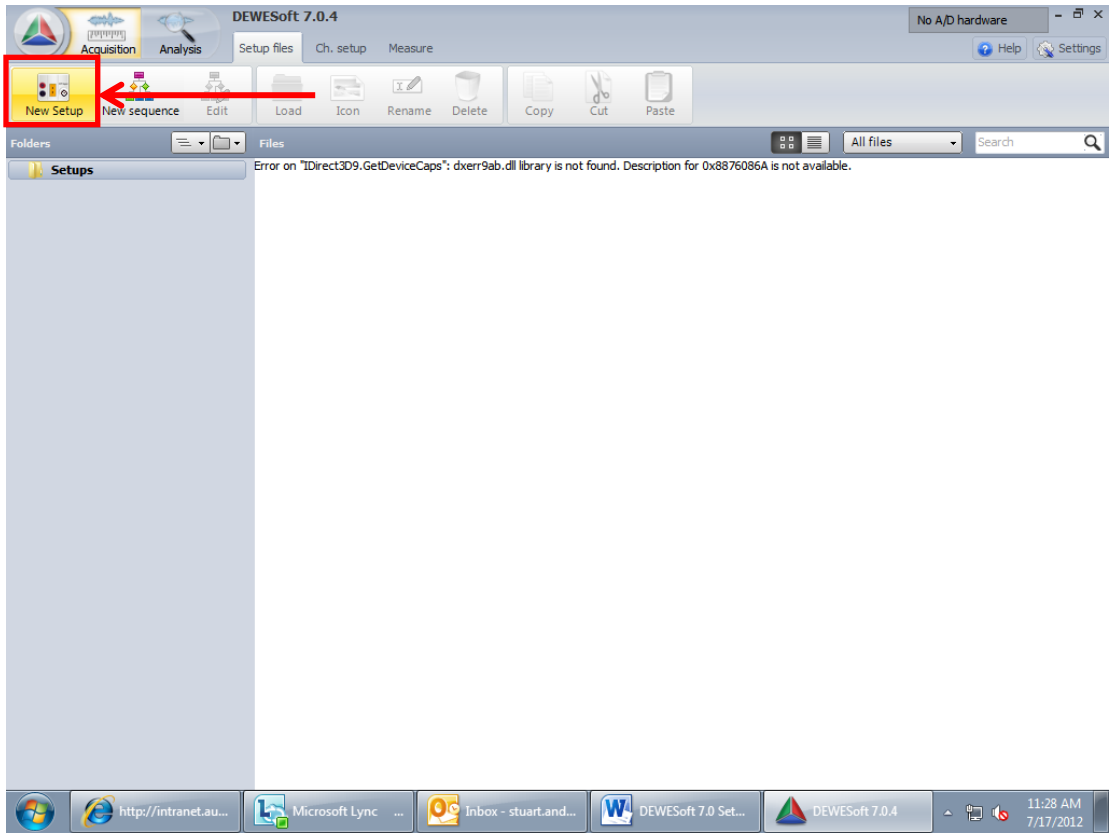
1. Open the DEWESoft 7.0 program. This can be done by double clicking on the shortcut from your desktop computer.



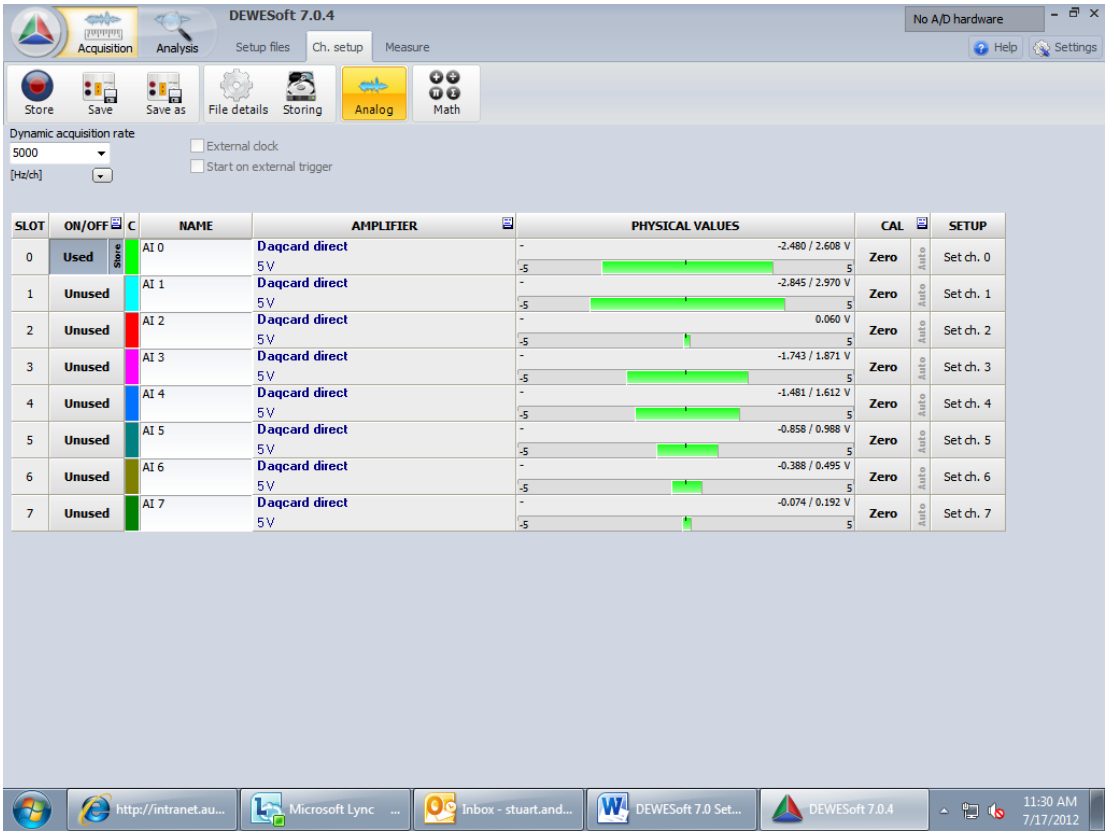
2. Allow the program to load. When fully loaded, you should then see a screen like this.



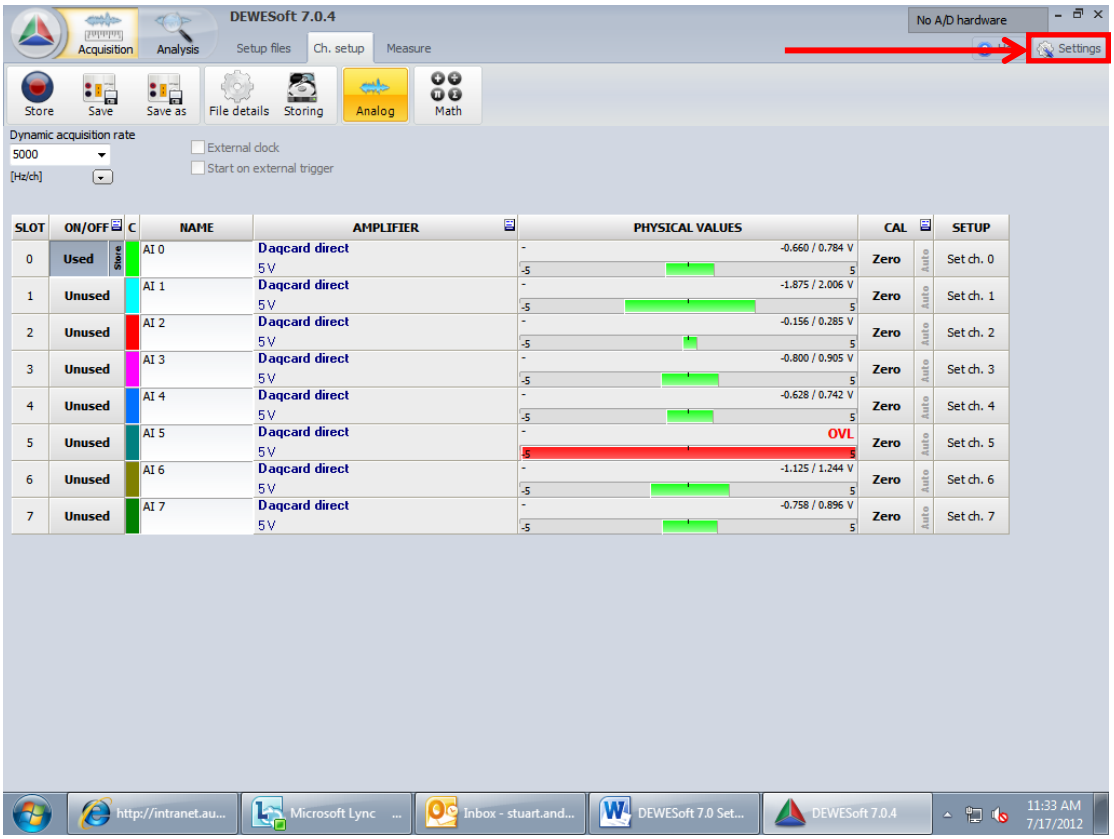
3. From here, click on the button located on the tab ribbon on near the top named “New Setup”.



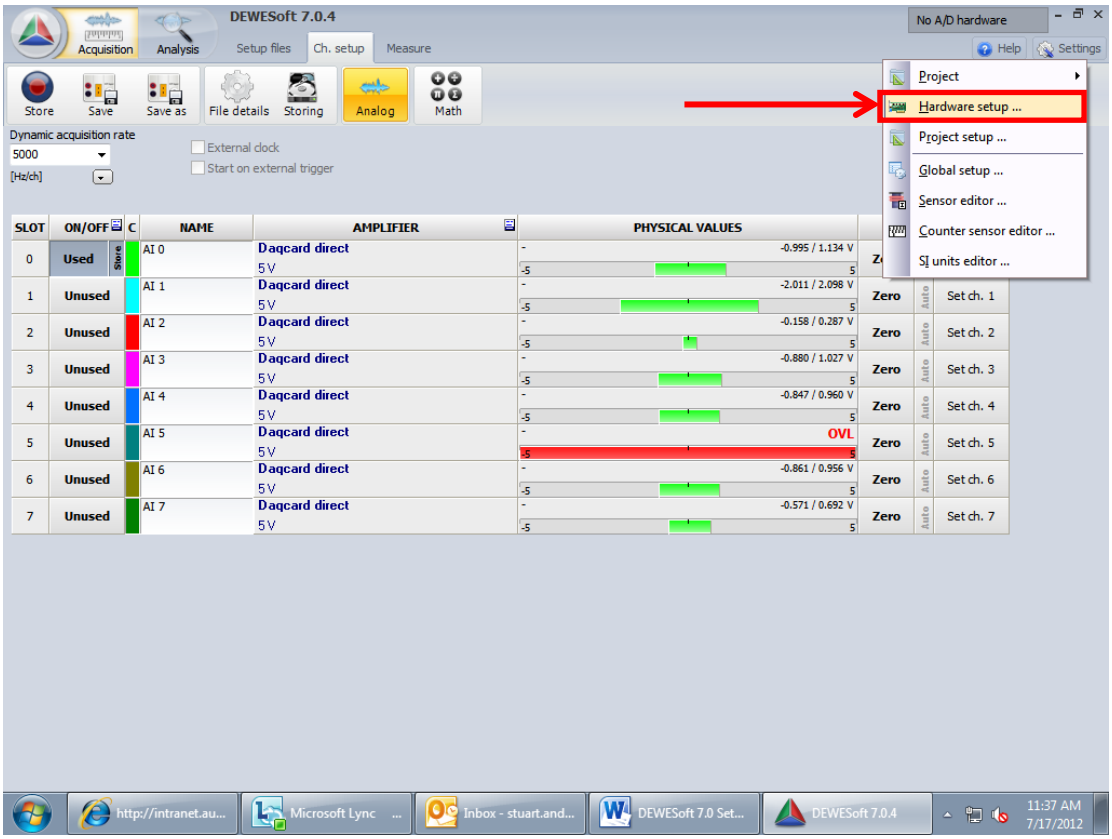
4. This screen will appear after clicking “New Setup”.



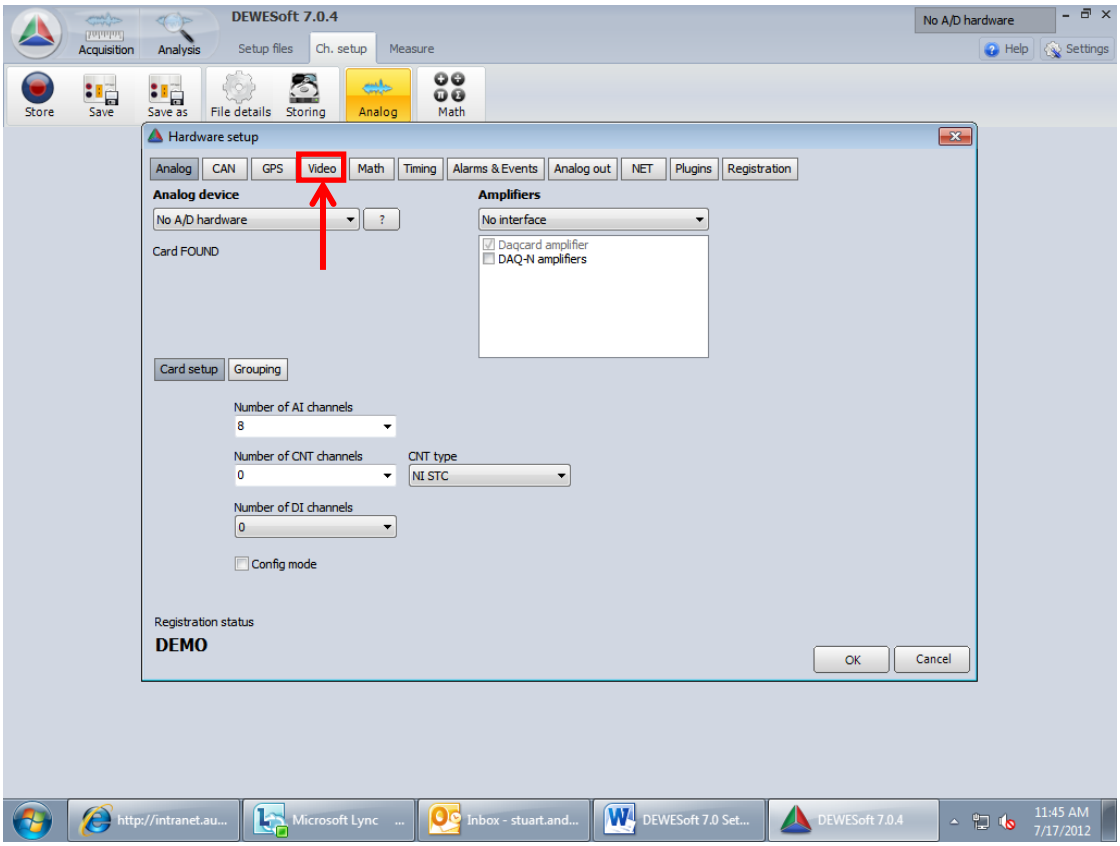
5. From here, select the “Settings” option in the top right hand corner.



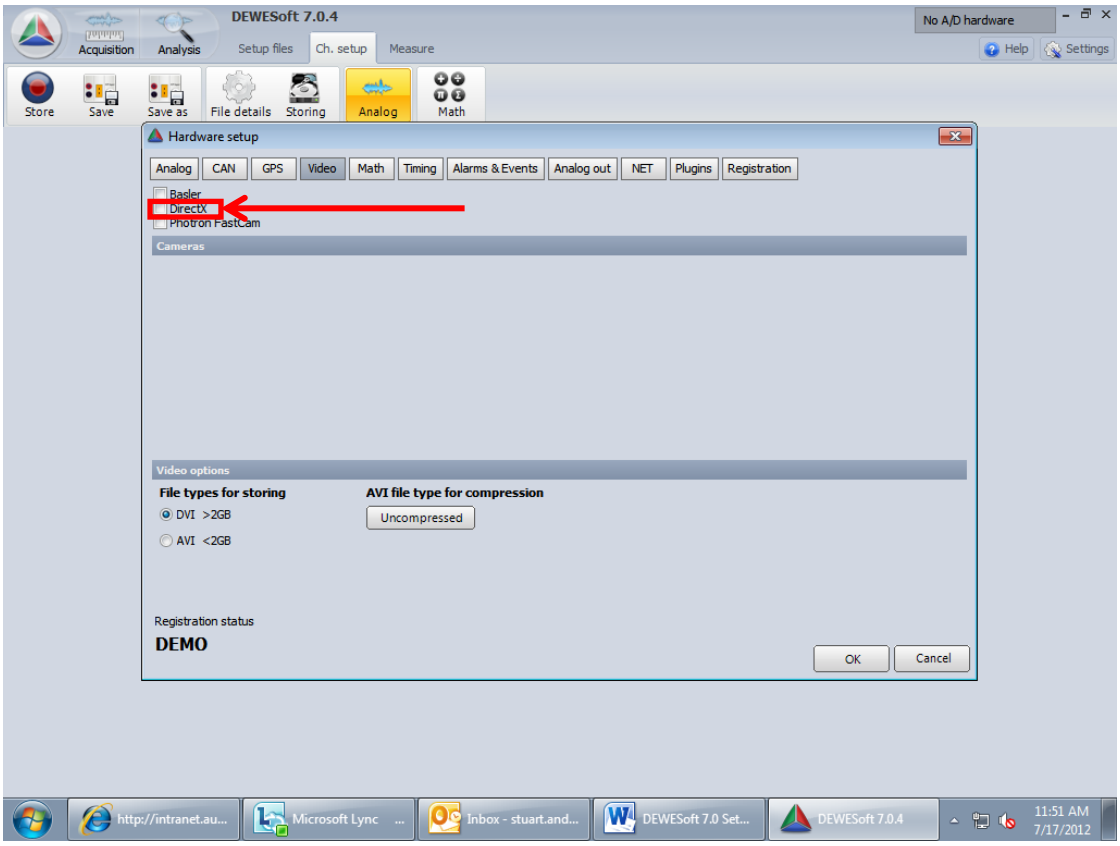
6. A drop-down menu will appear, in this menu, select “Hardware setup”.

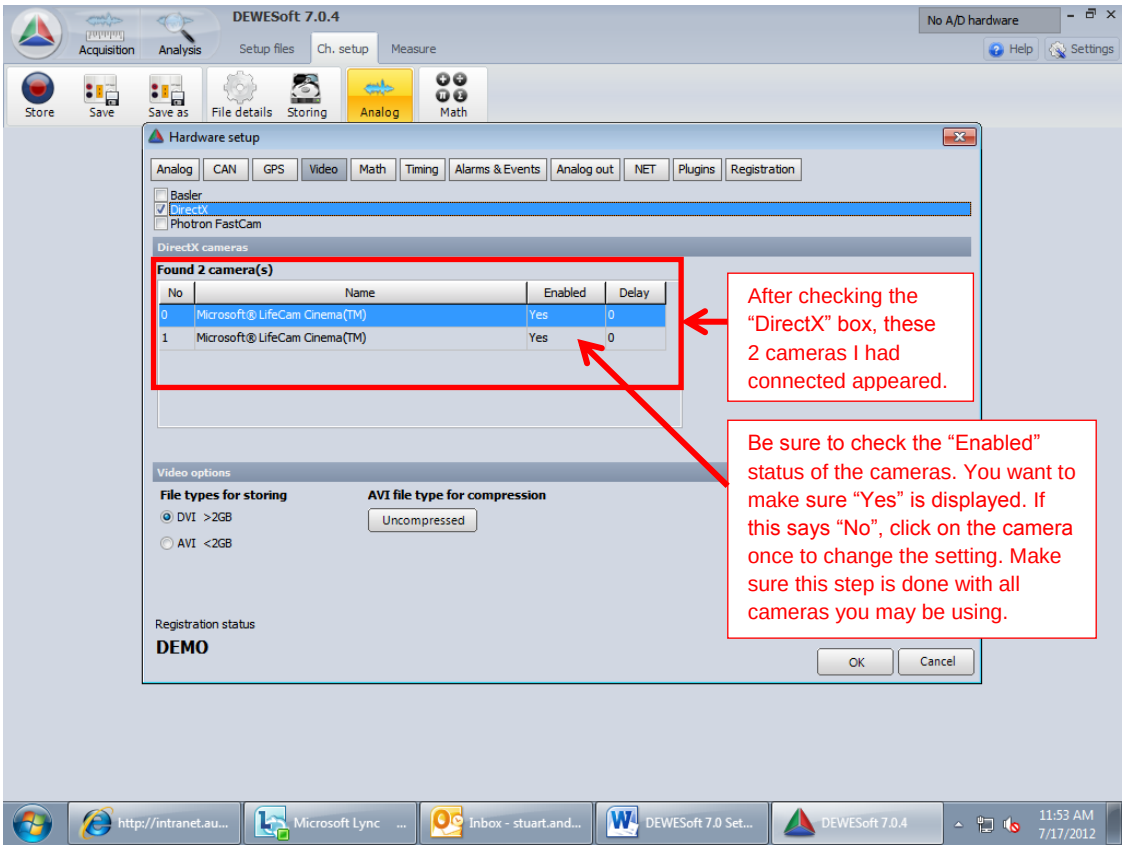


7. This screen will pop up. From here, select the “Video” tab.

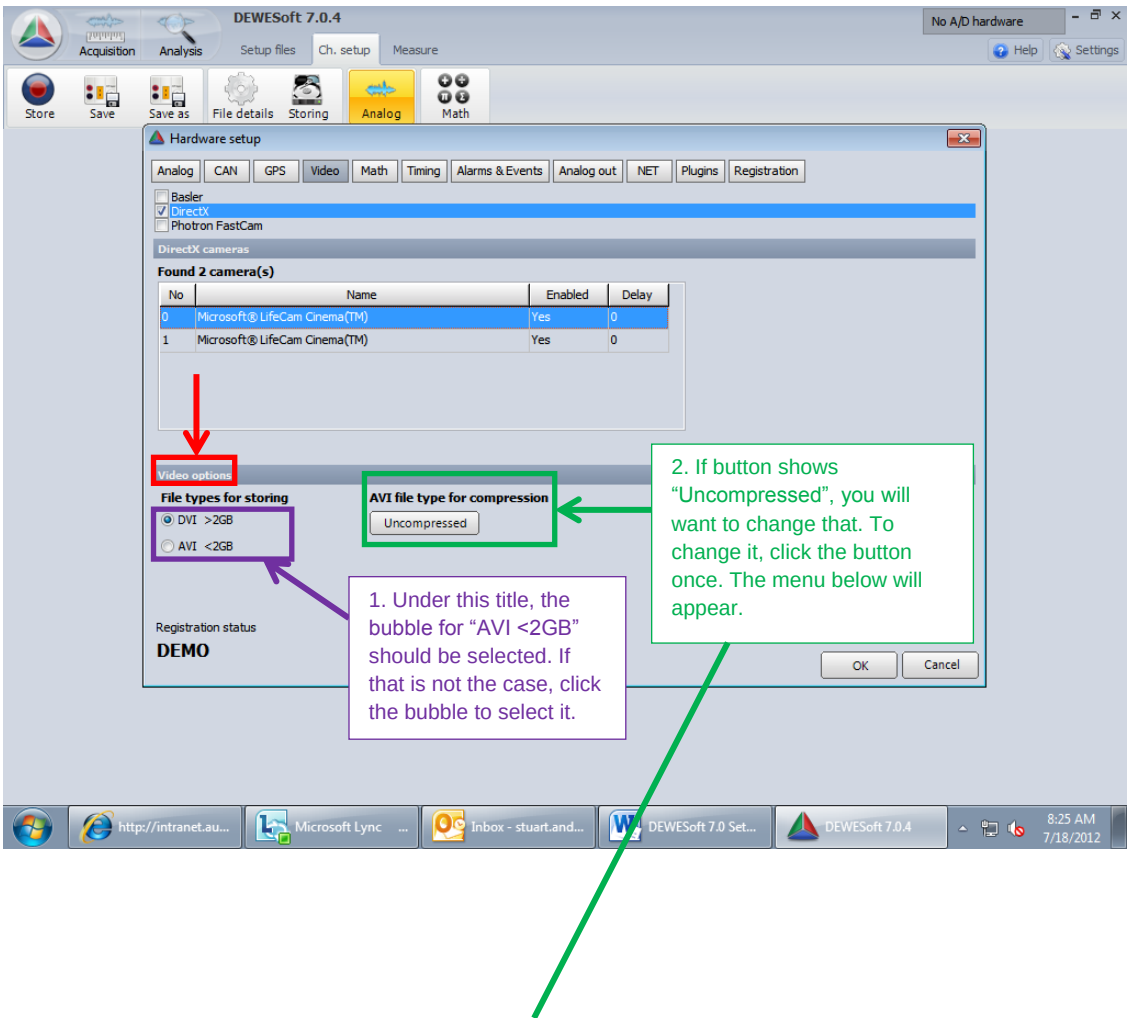


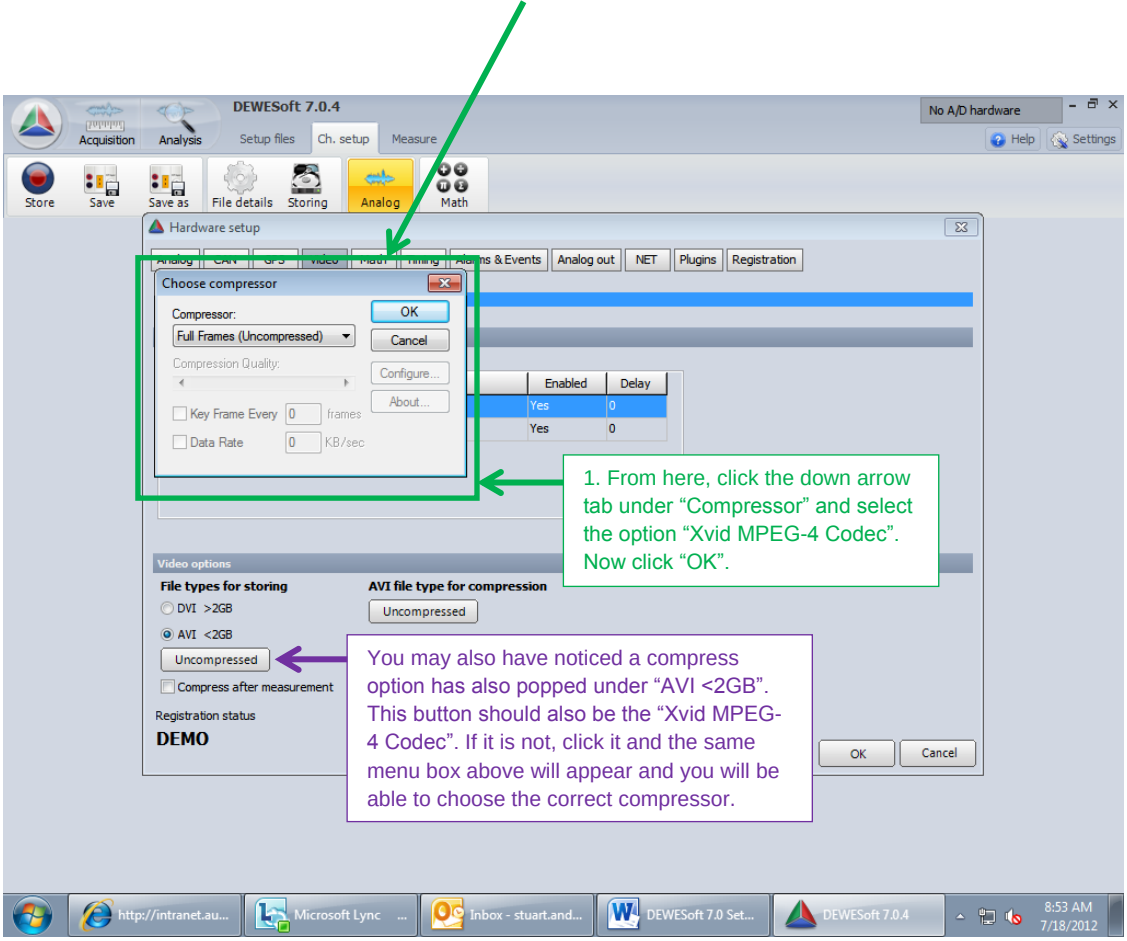
8. Before moving on, make sure you have all your cameras connected. This manual is being written assuming you will be using the Microsoft© LifeCam Cinema cameras. When you are sure everything is connected properly, check the box next to “DirectX”. After checking this, the cameras that are connected should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



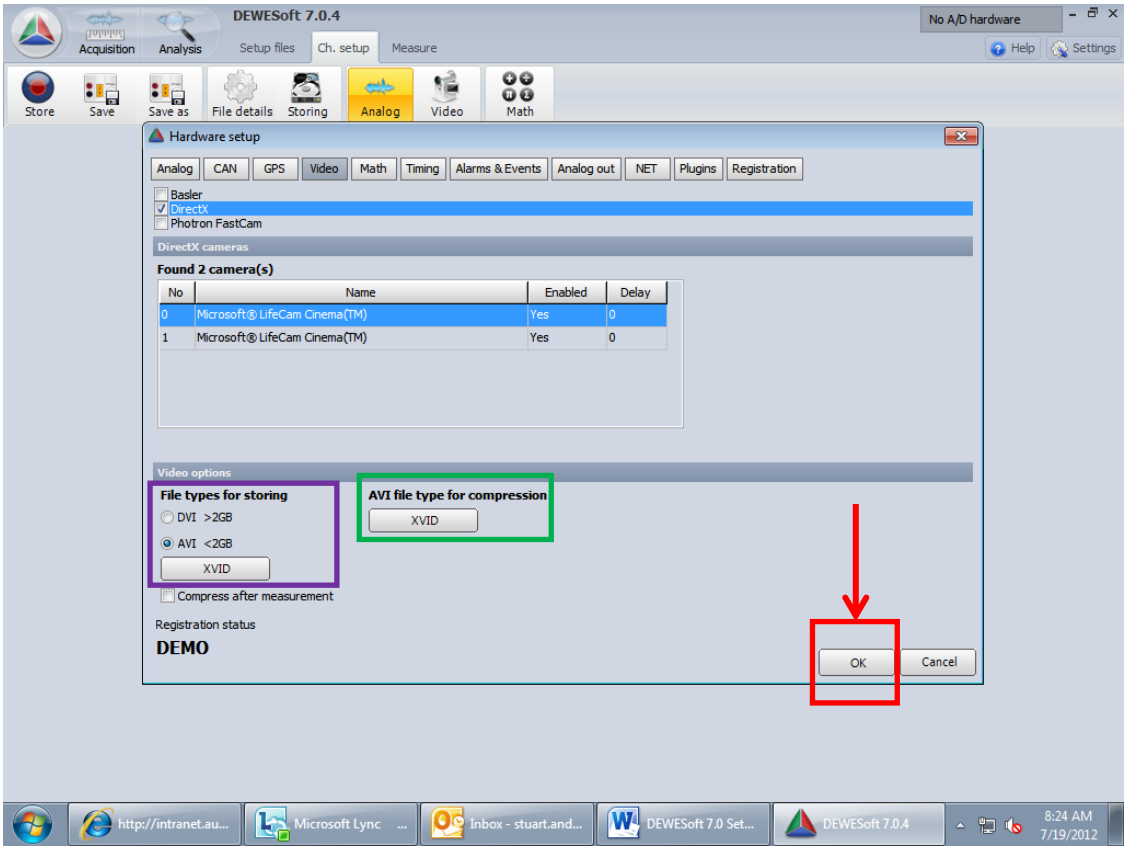


9. On this same window, you also want to double check some things in the "Video options" (Red). The first thing to check would be the "AVI file type for compression" (Green). Also, you should look at the "File types for storing" (Purple). Start first with the "File types for storing" (Purple).

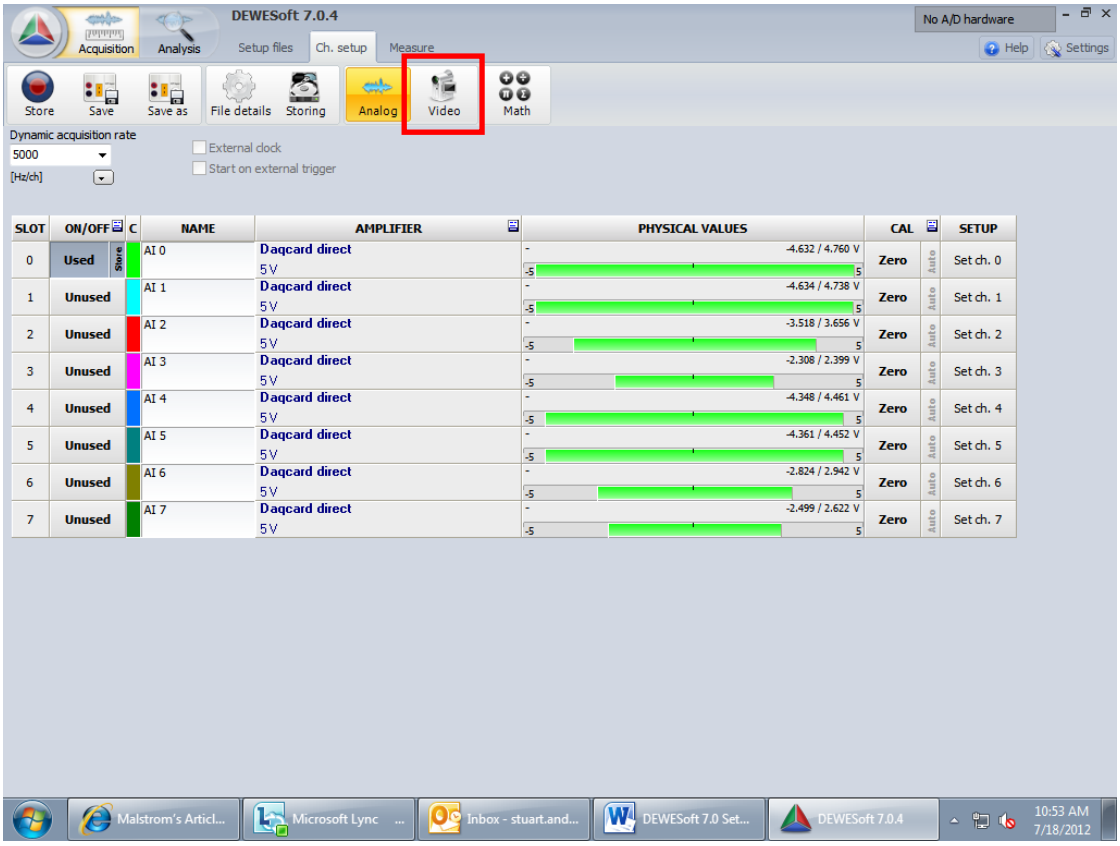




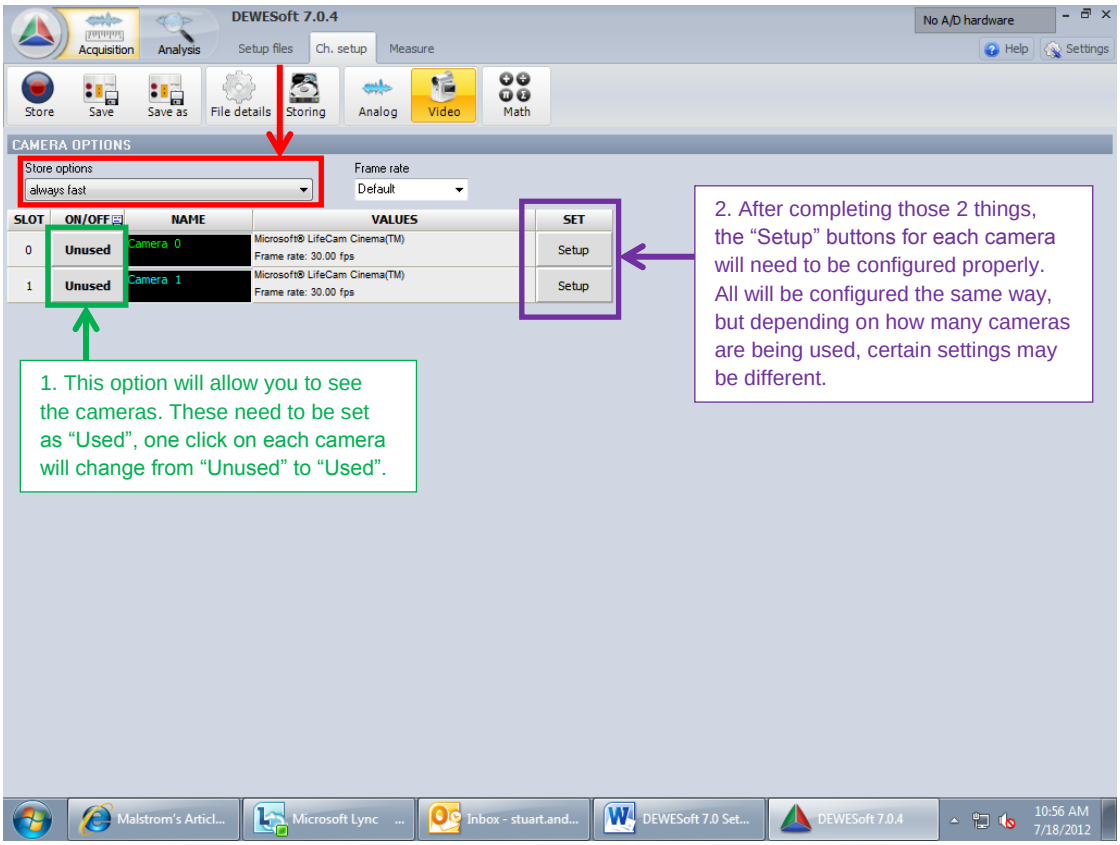
After changing both compressions, the screen below should look like this. If you look below the “AVI file type compression” (Green) label and under the “AVI <2GB” (Purple) they should now read “XVID”. Your “Video -> Hardware setup” is complete. Just press the “OK” button now (Red).



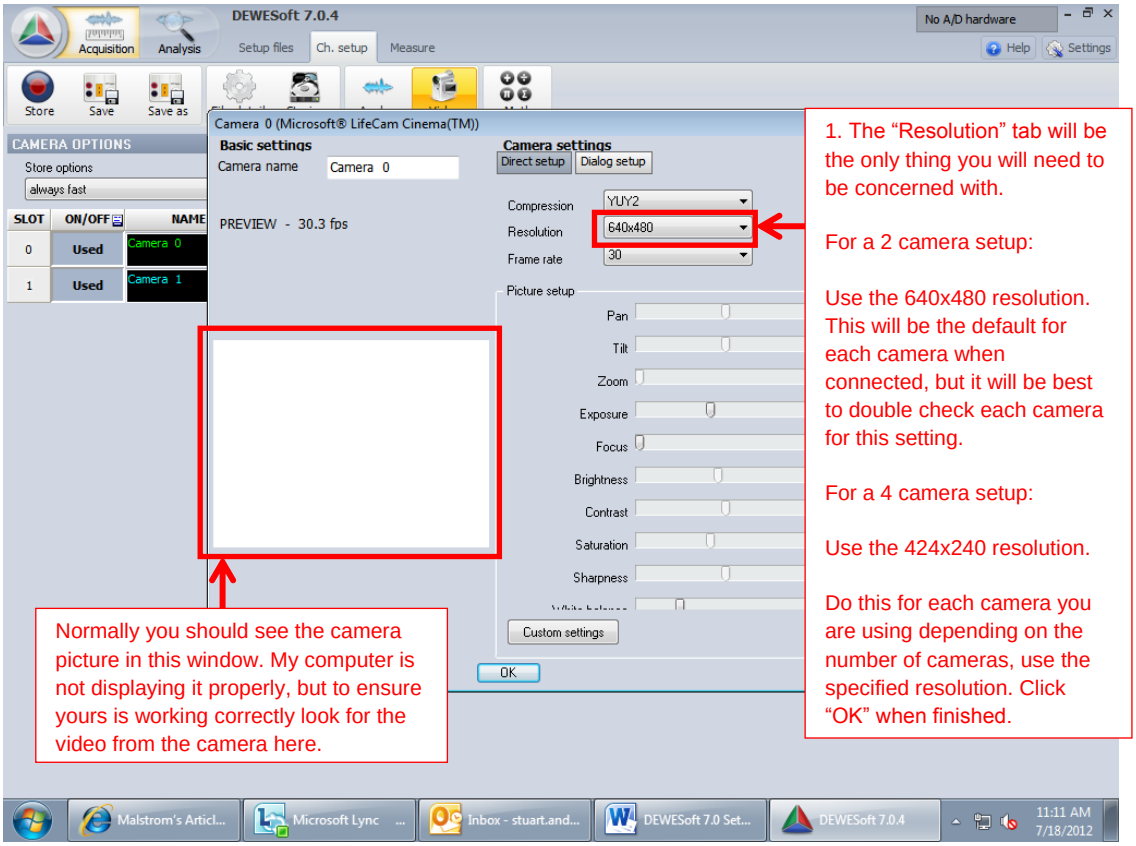
10. A new “Video” tab will pop up at on the top ribbon bar. You will want to click on it.



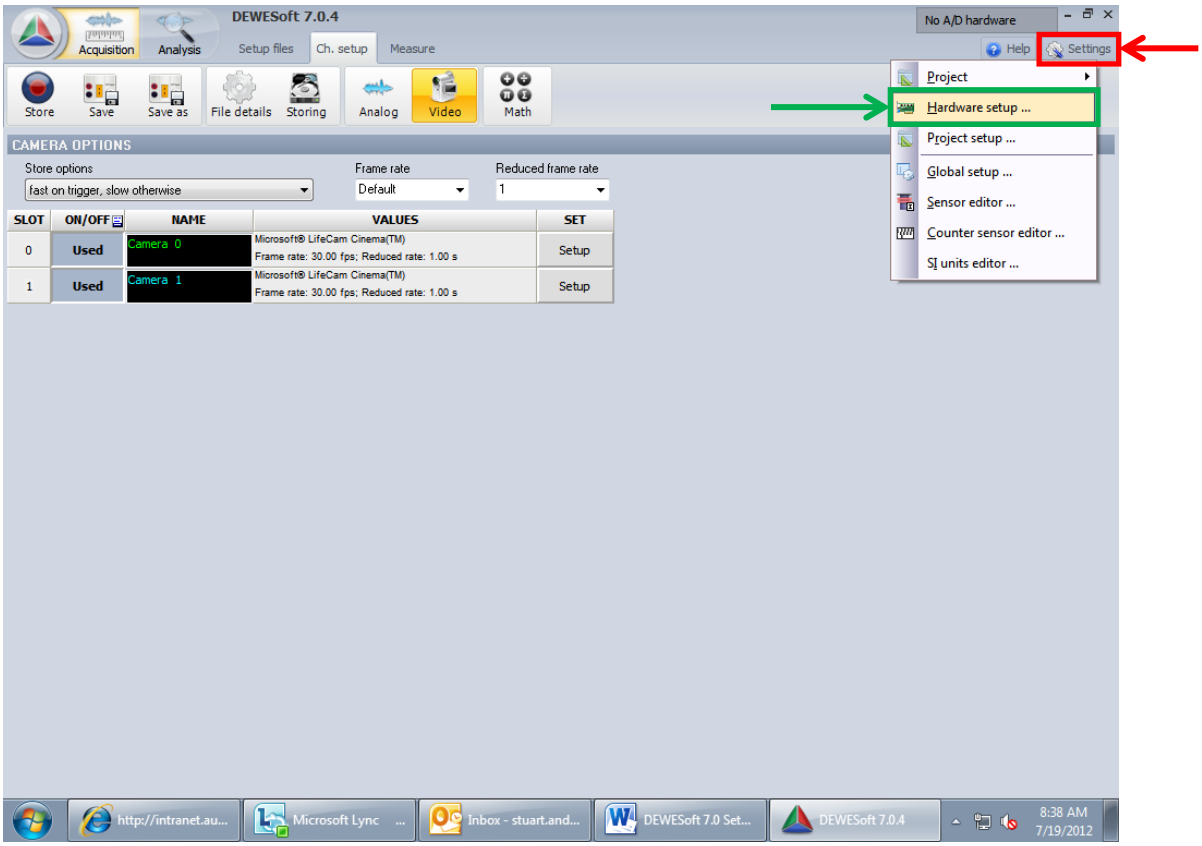
11. Now at this point you should see the cameras that you have attached. Depending on if you are using 2 or 4 cameras, this next part will be slightly different. First under “Store options”, change the drop-down bar to the option of “fast on trigger, but slow otherwise” (Red).



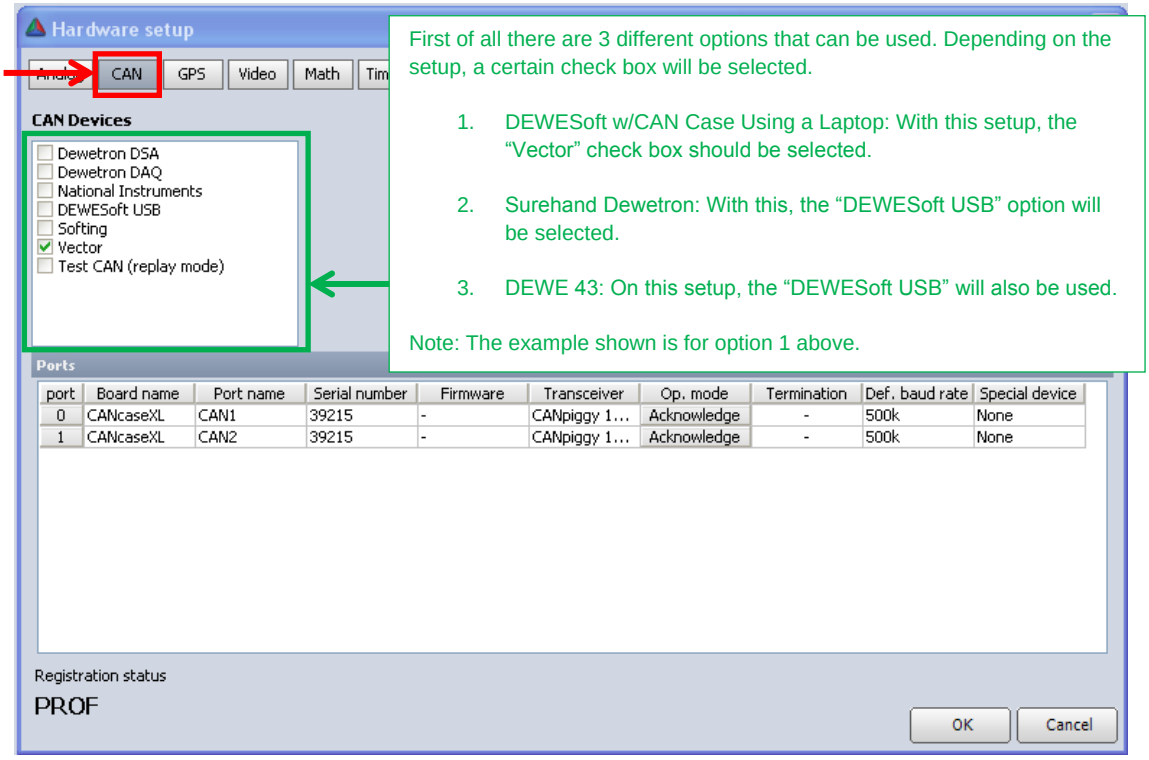
12. Here is what the “Setup” for each camera will look like.



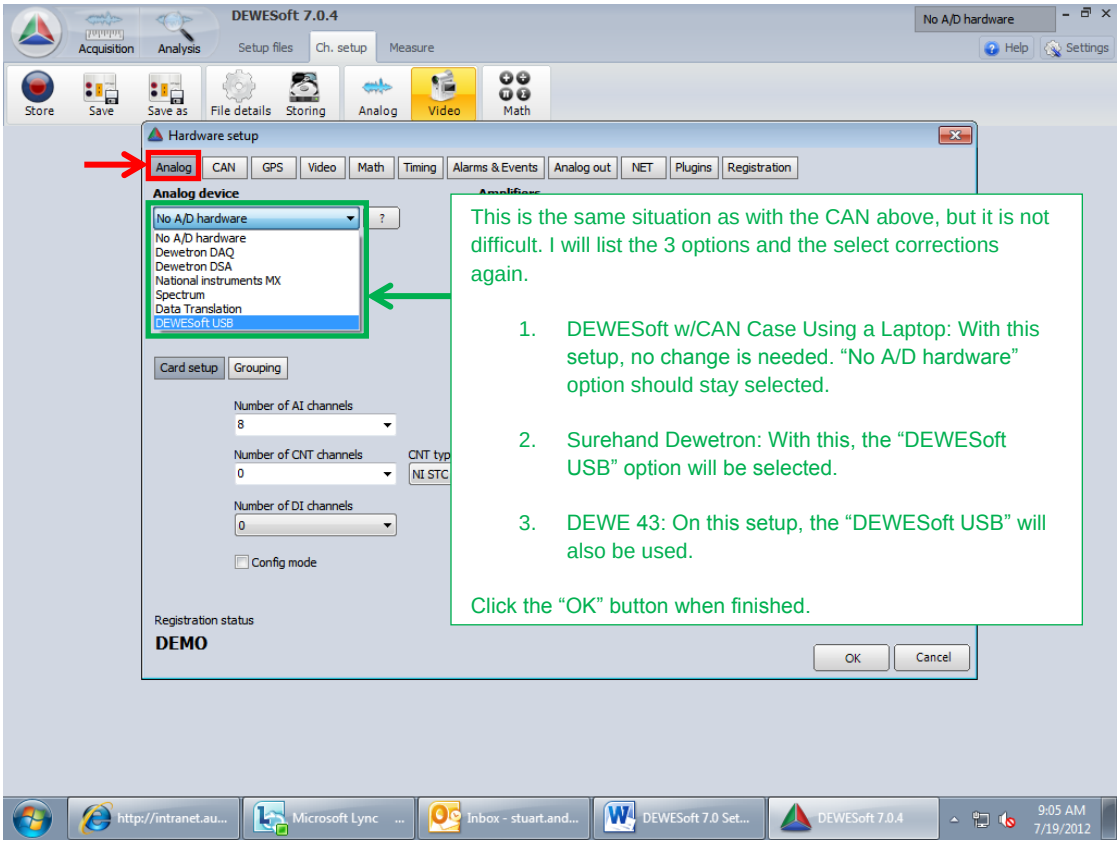
13. Now that the cameras are all setup, the next thing to do is set up the CAN hardware. At this point click the “Settings” (Red) button again and click on “Hardware setup” (Green).



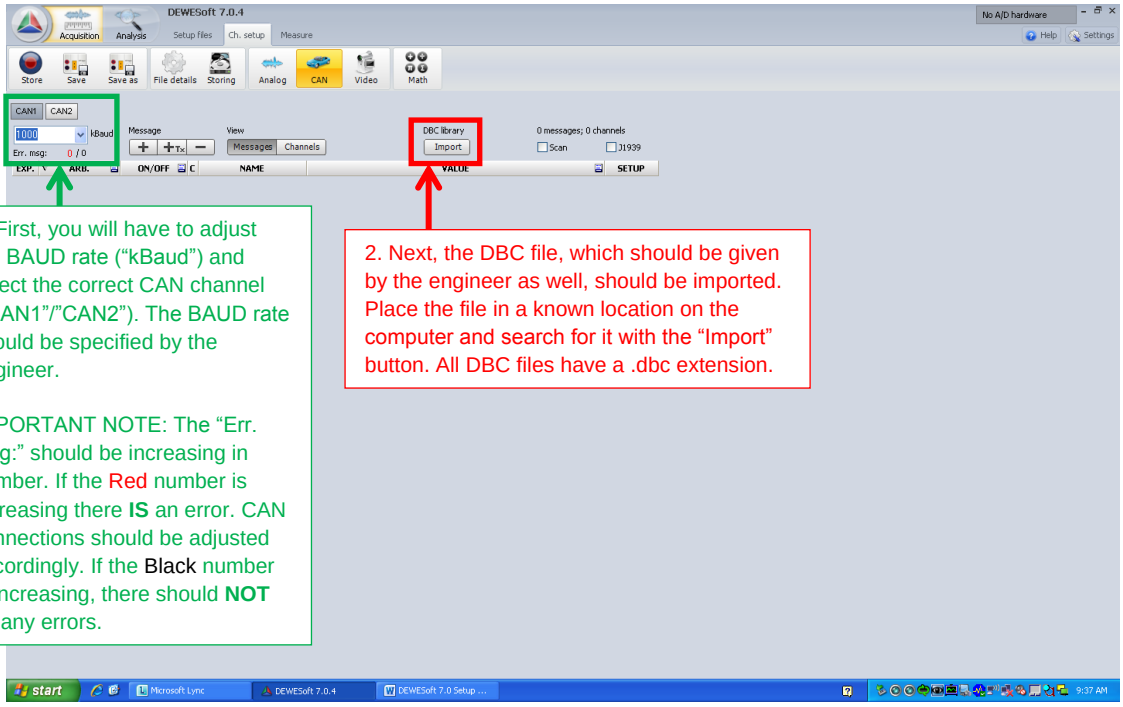
14. From this window, click on the “CAN” (Red) tab. Now depending on which Dewetron you are using, this next part is slightly different. The (Green) box below will explain the differences.



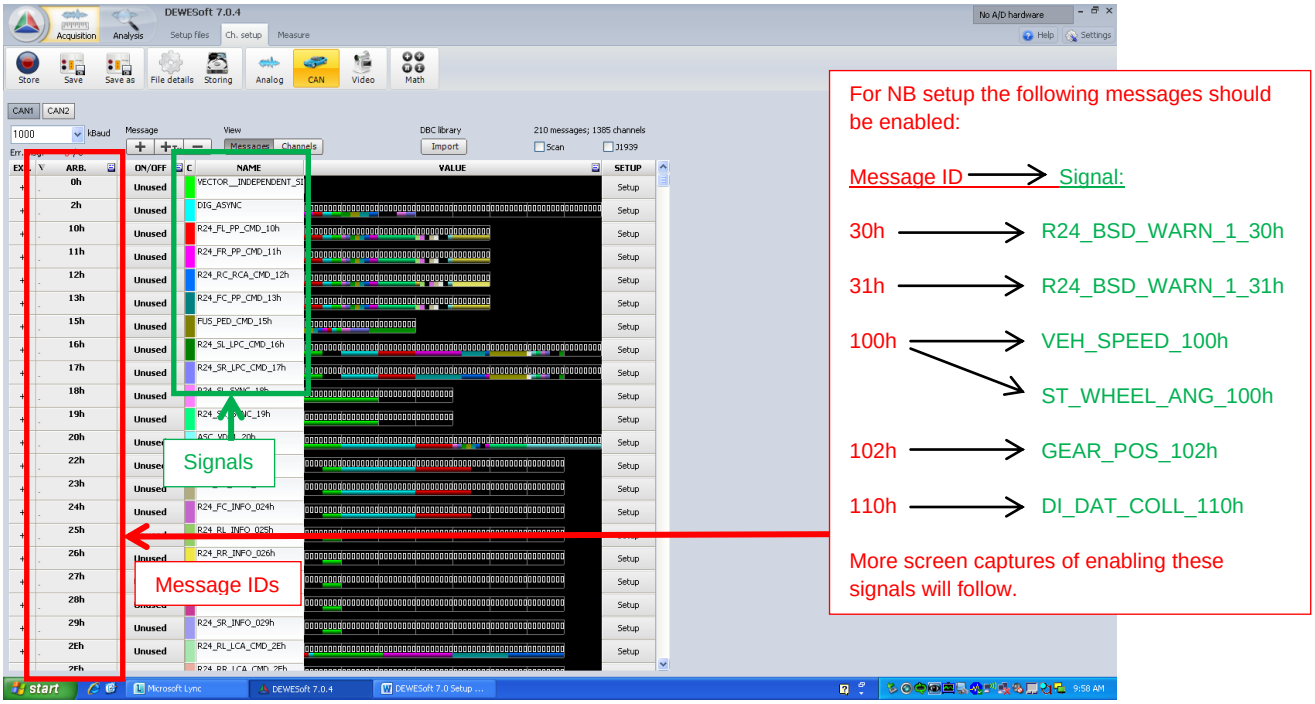
15. That takes care of the CAN hardware. Now select the “Analog” (Red) tab to the left of the “CAN” tab.



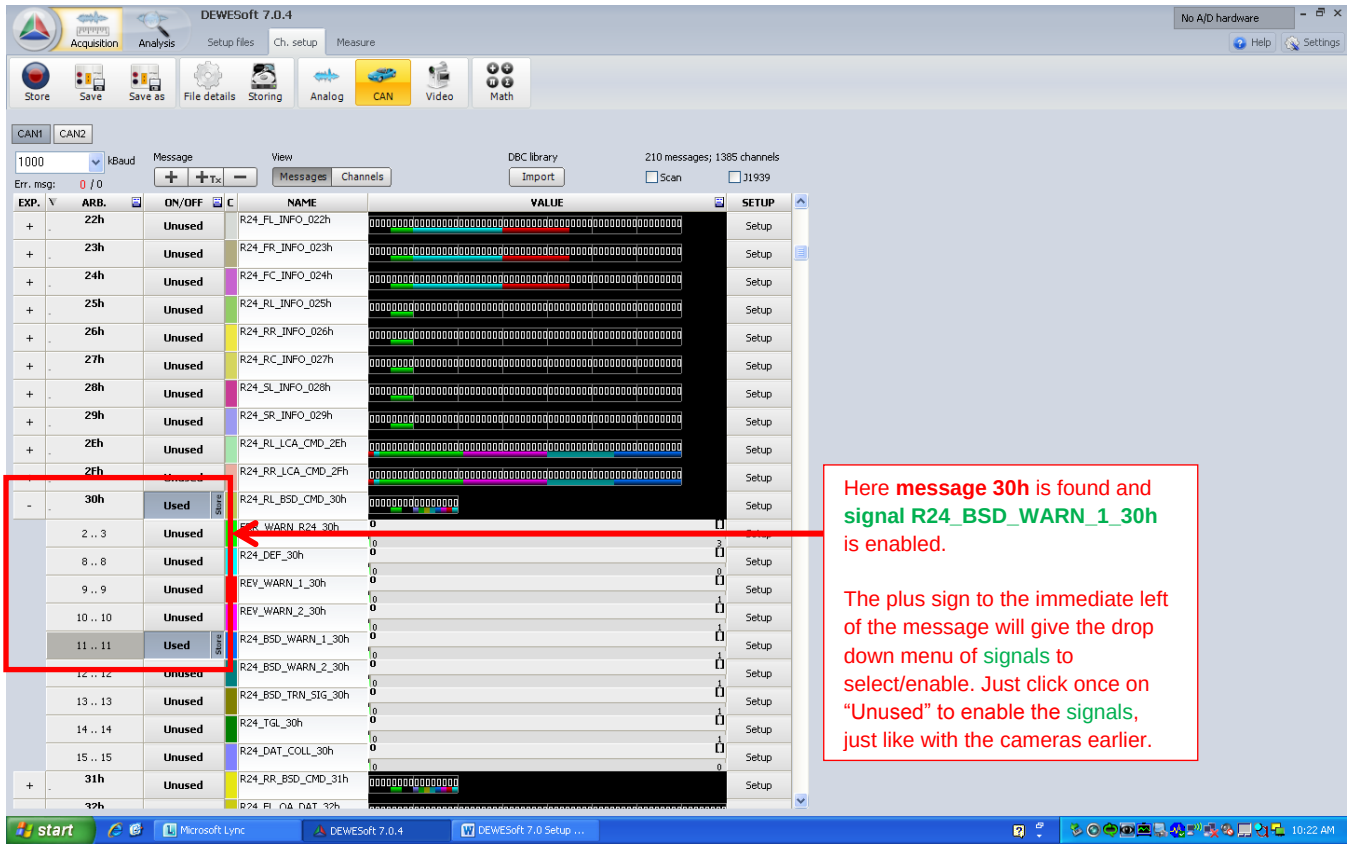
16. Now a new ribbon tab will appear on the top labeled “CAN”. Select this tab.

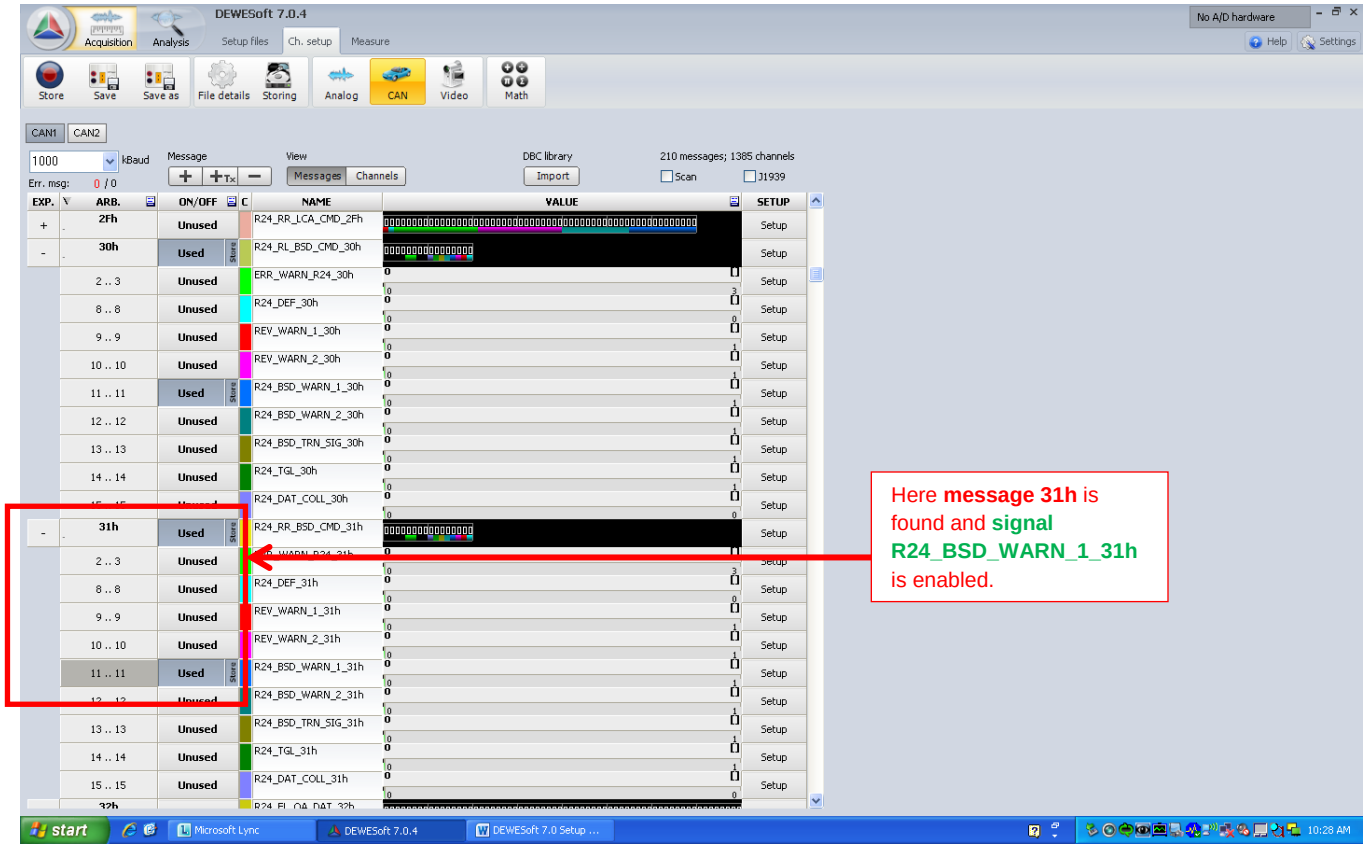


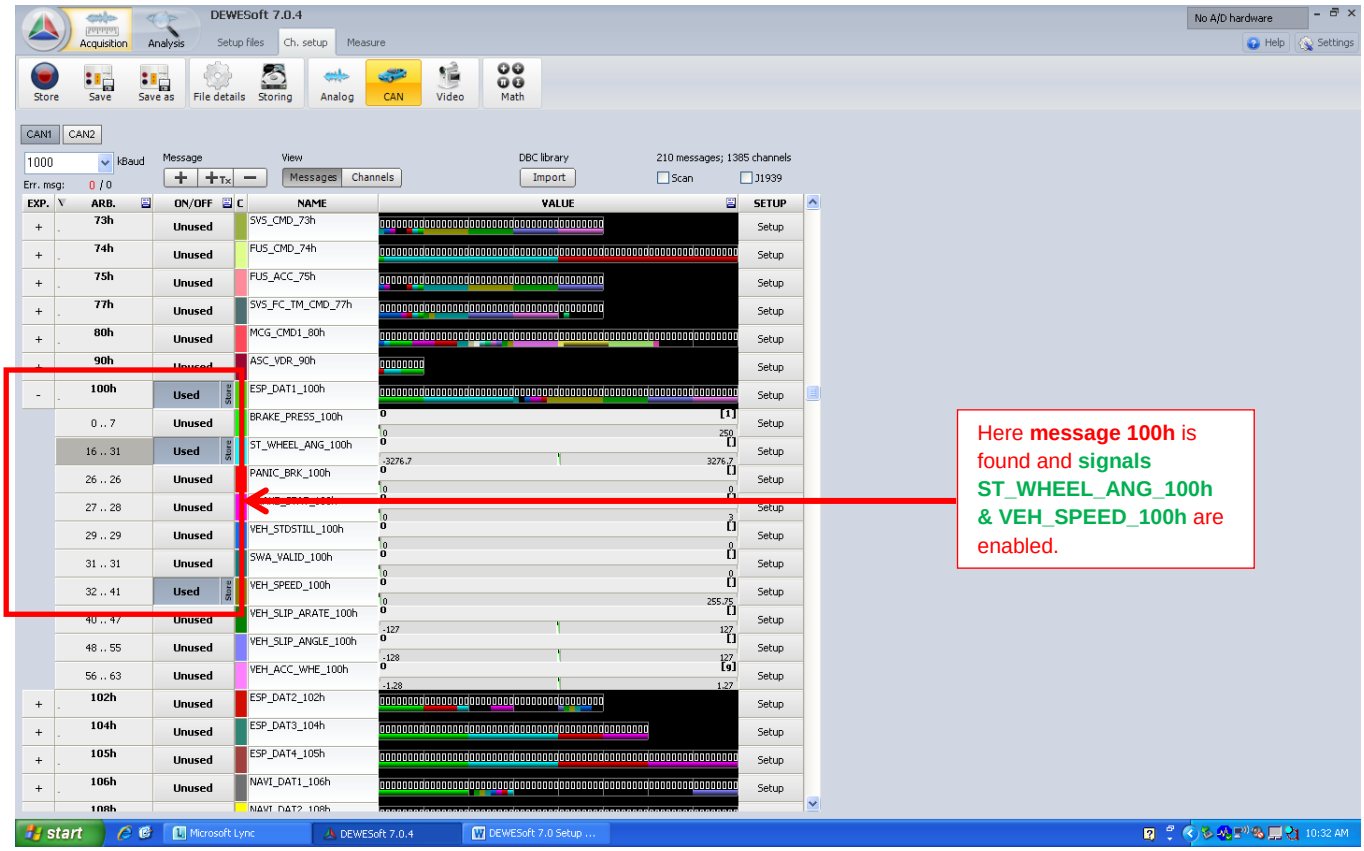
17. After loading the DBC file, many different messages will appear (As shown below). Message configuration is the next step. The example being used is for a Narrow Band (NB) setup configuration. This next step may be confusing, but I will explain very thoroughly the steps to go about. All of these message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



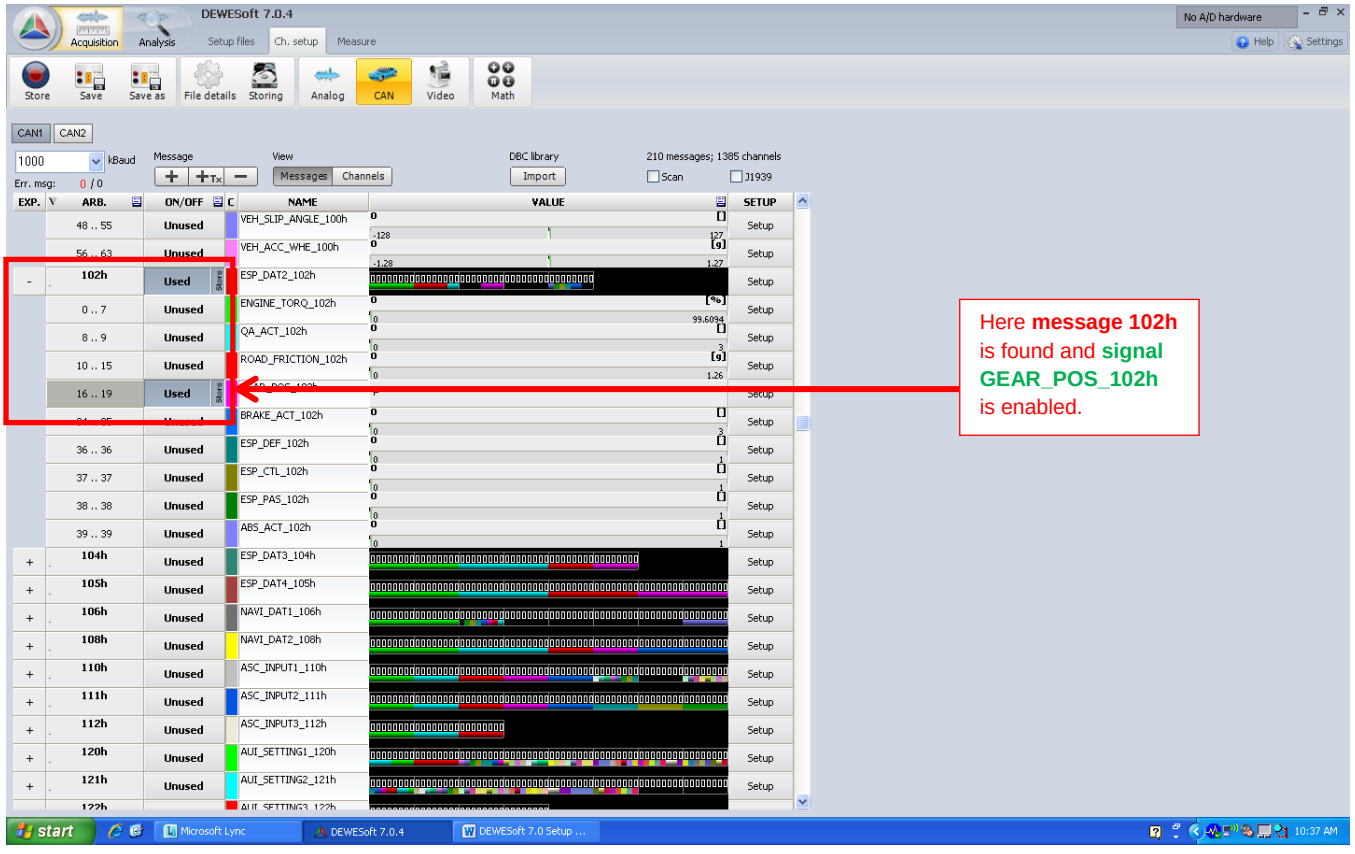
18. The next few pictures show the complete activation process of the messages and the signals.



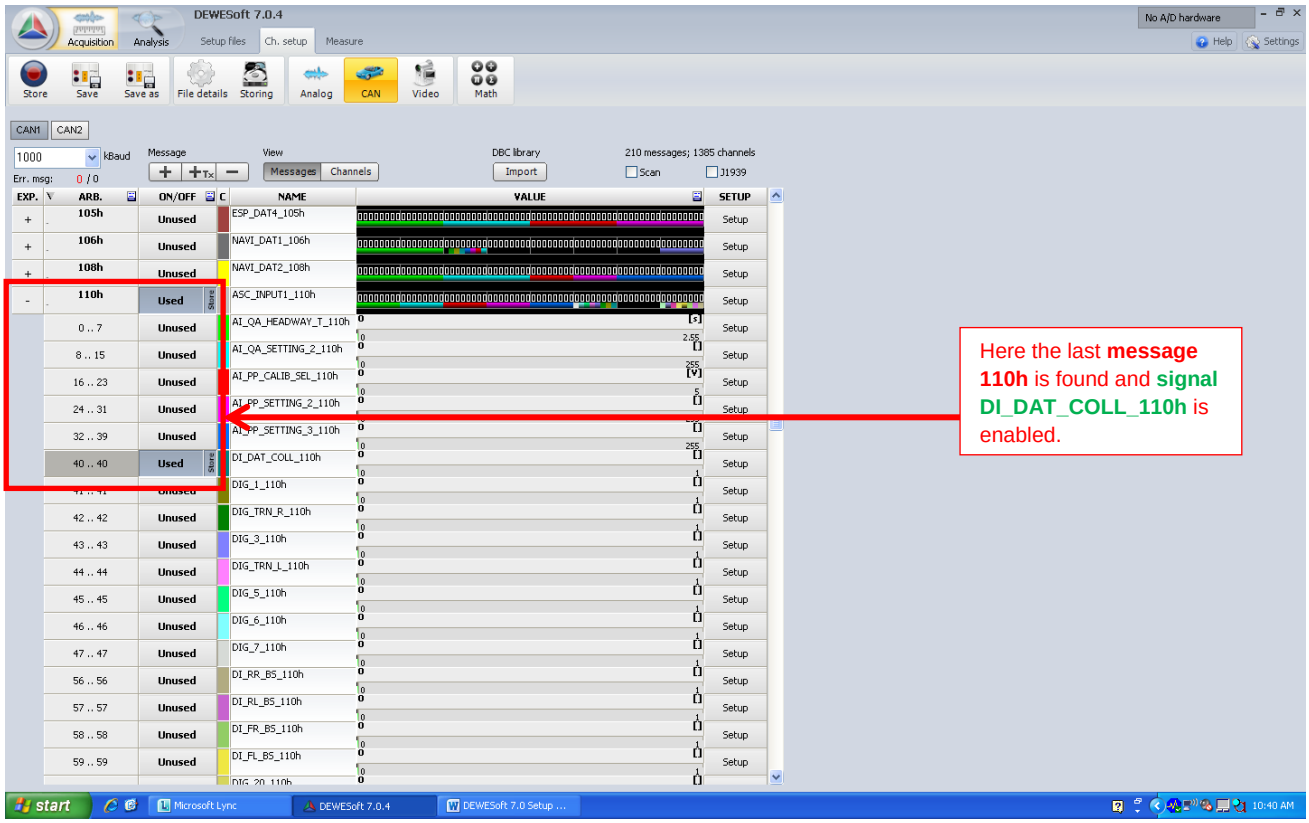




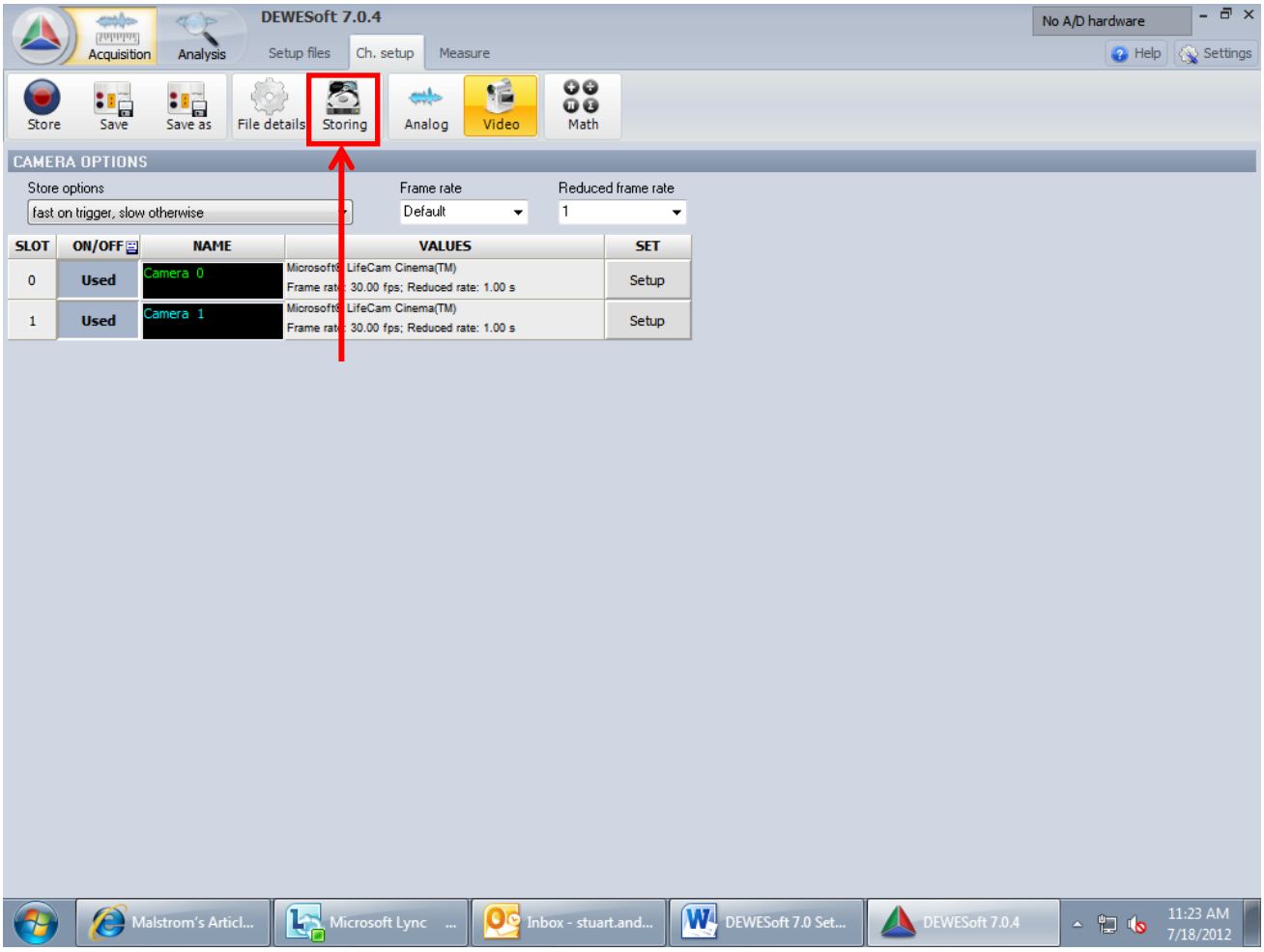
Here **message 100h** is found and **signals ST_WHEEL_ANG_100h & VEH_SPEED_100h** are enabled.



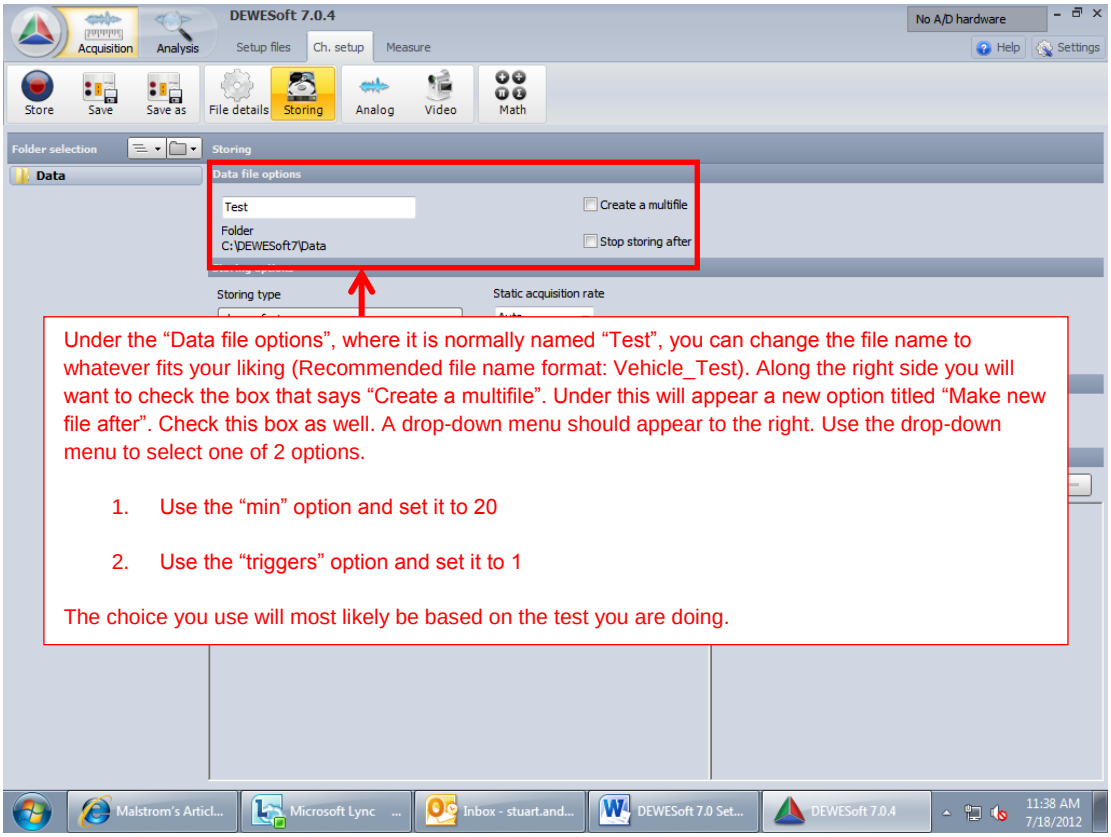
Here **message 102h** is found and **signal GEAR_POS_102h** is enabled.



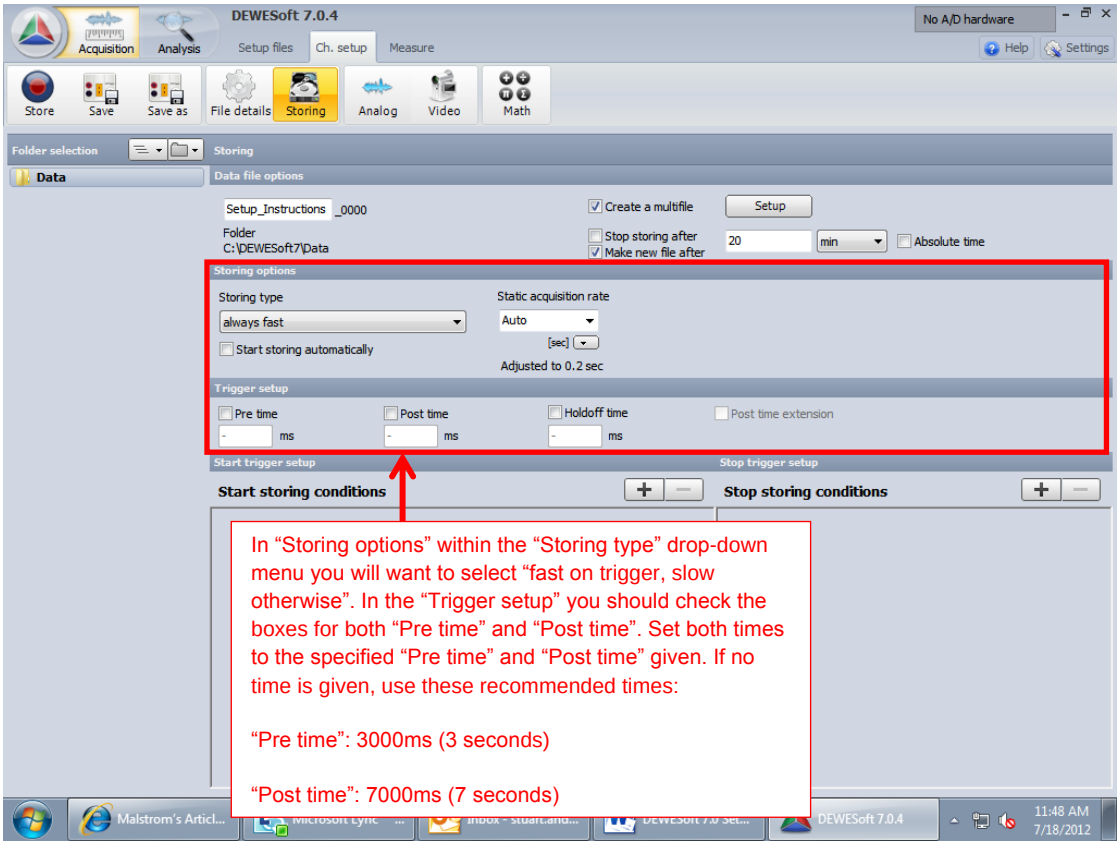
19. Now you will want to click the “Storing” tab located on the top ribbon.



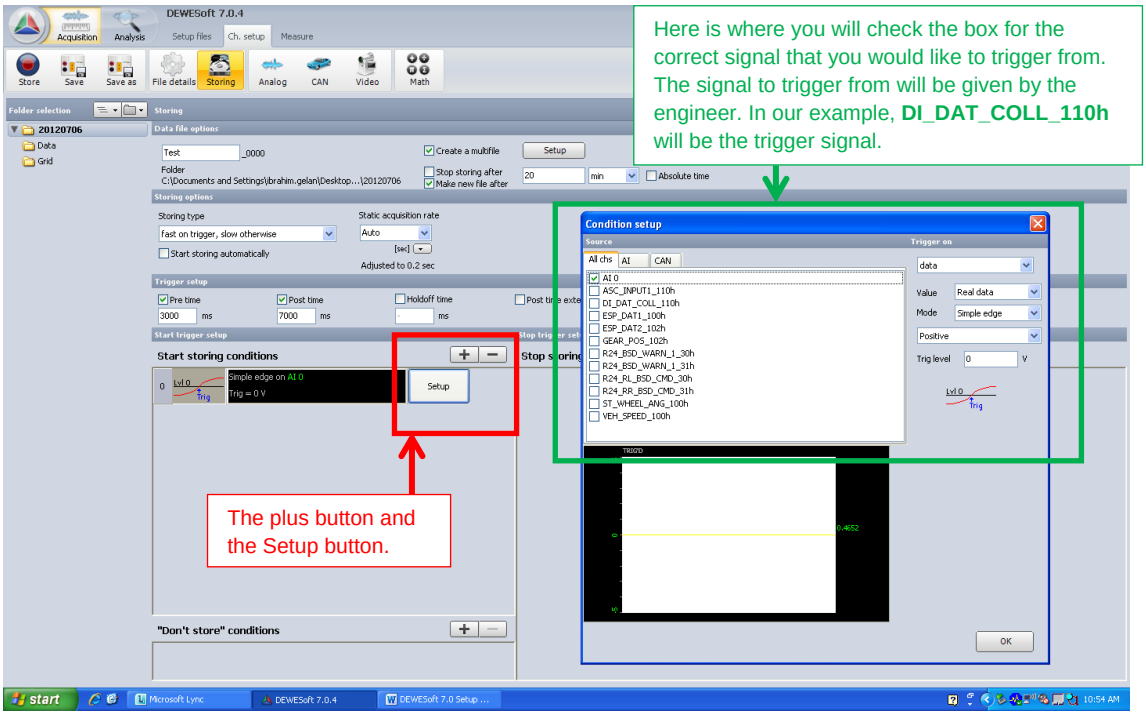
20. Here is what the screen will look like.



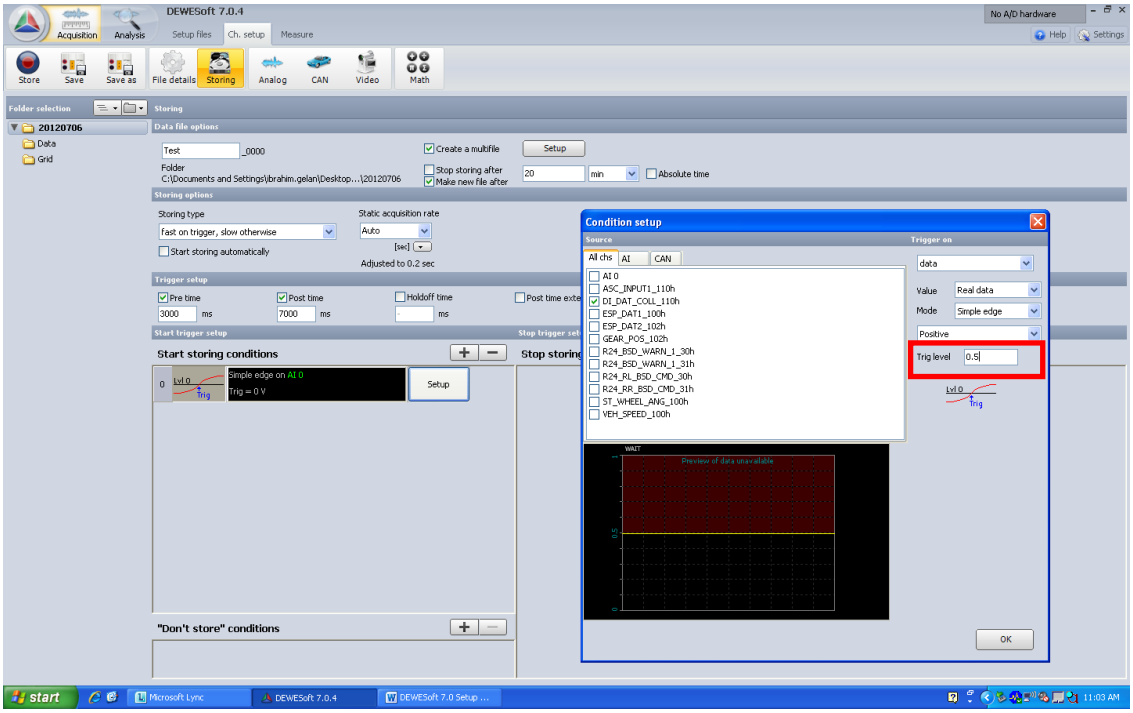
21. The screen below should look like this after completing the above tasks. Next are the “Storing options” and “Trigger setup” which are underneath the “Data file options”.



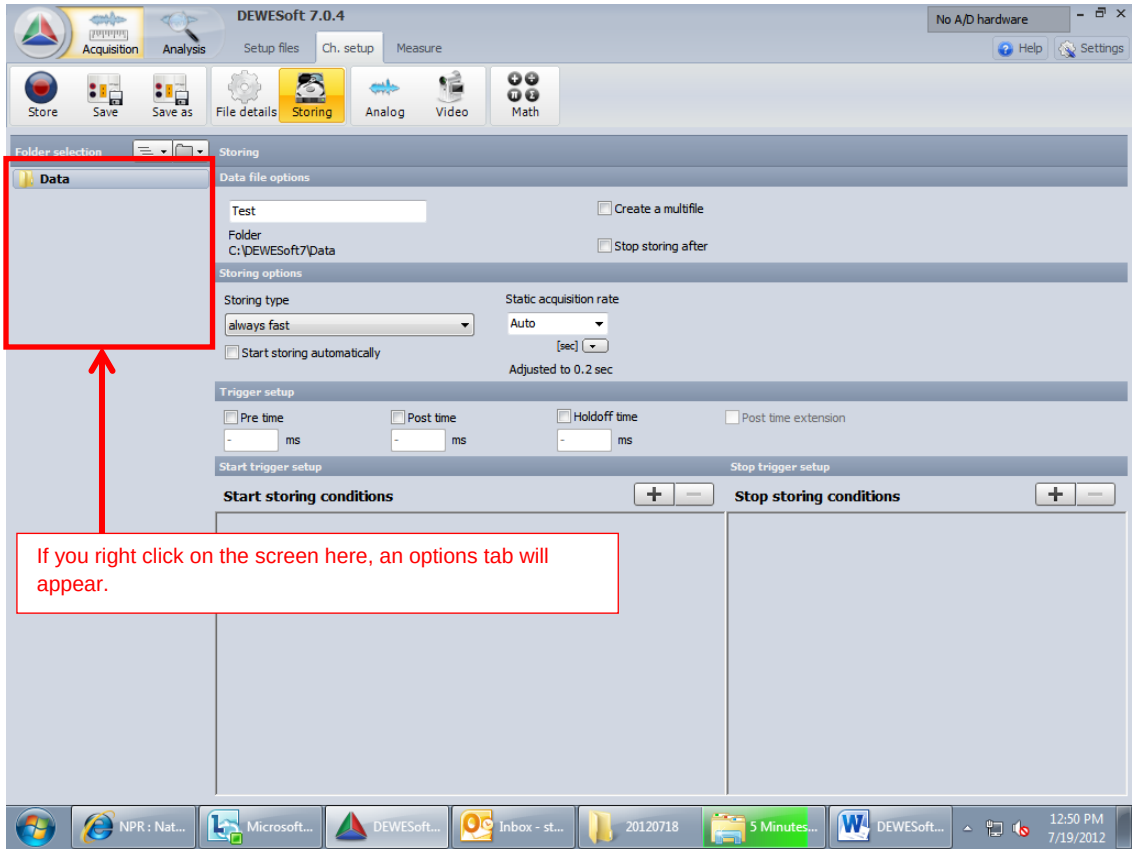
22. The next step is the “Start trigger setup”. Under that title you will need to configure the “Start storing conditions”. Use the plus button to the right to add a condition and then click the “Setup” button on the condition.



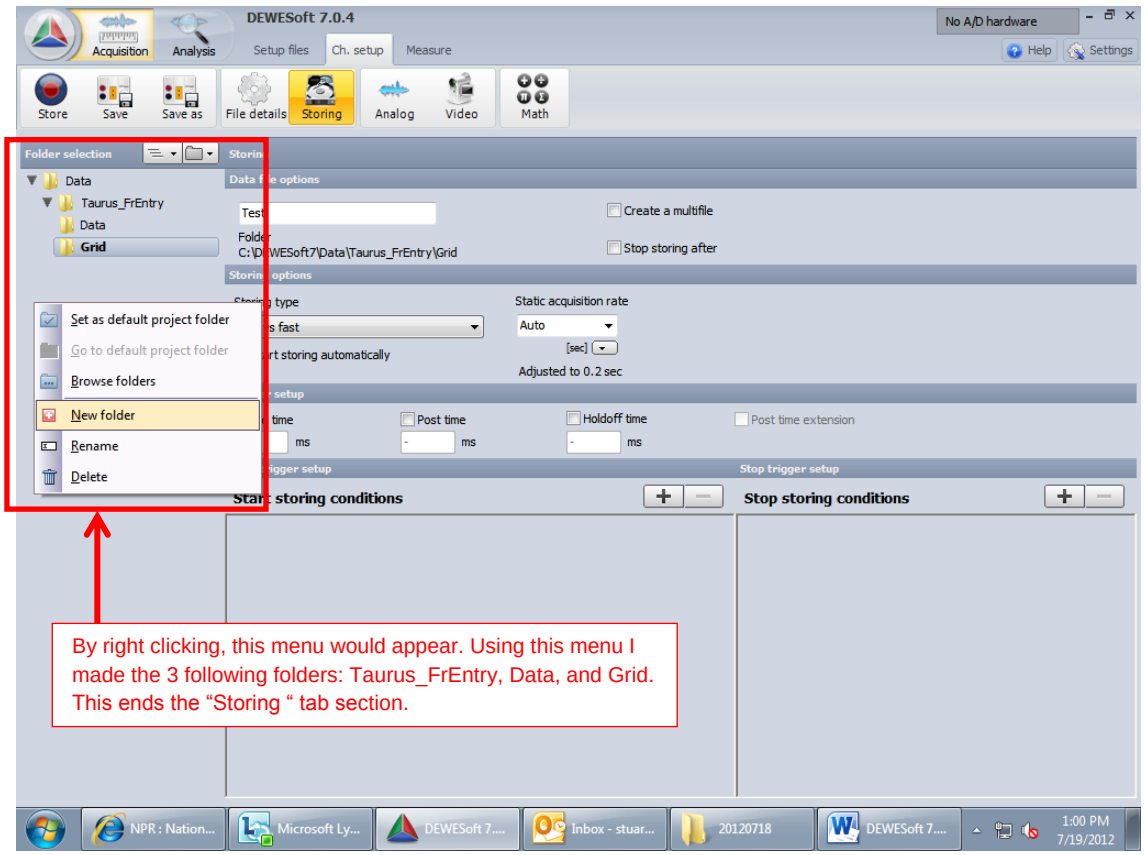
23. Now that DI_DAT_COLL_110h is selected, the “Trig level” (Red) needs to be set. A value of 0.5 is recommended unless otherwise specified by the engineer. This finishes the trigger conditions.



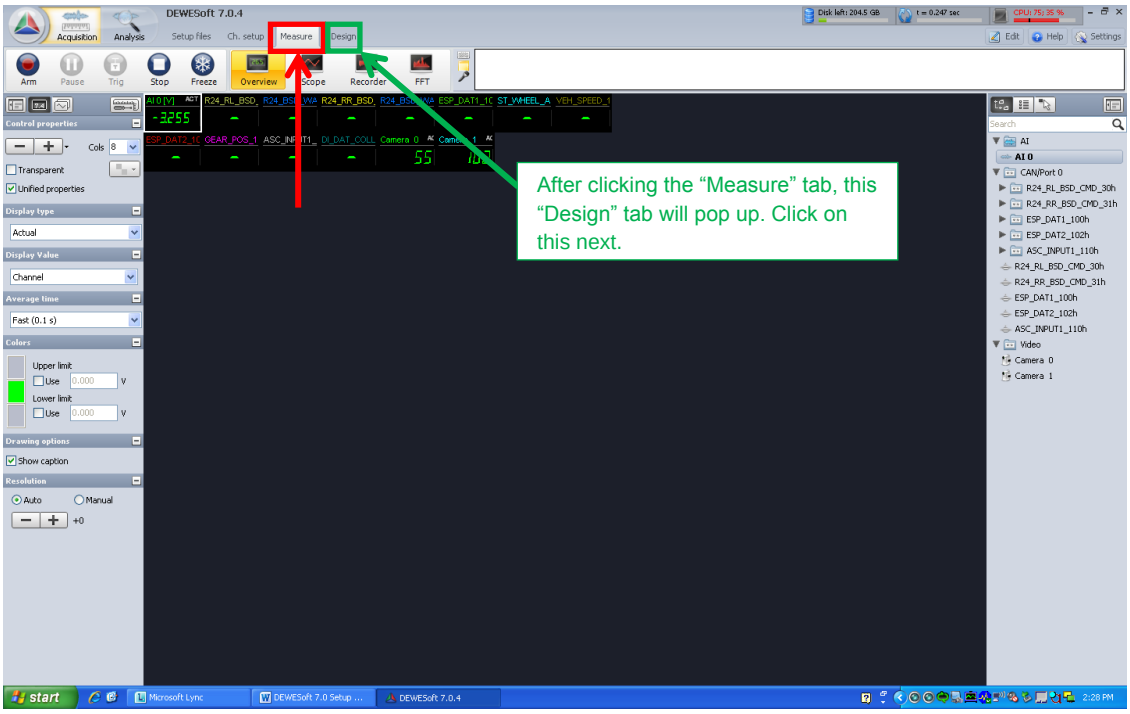
24. The last thing to do in the “Storing” tab is create folders to store your test data.



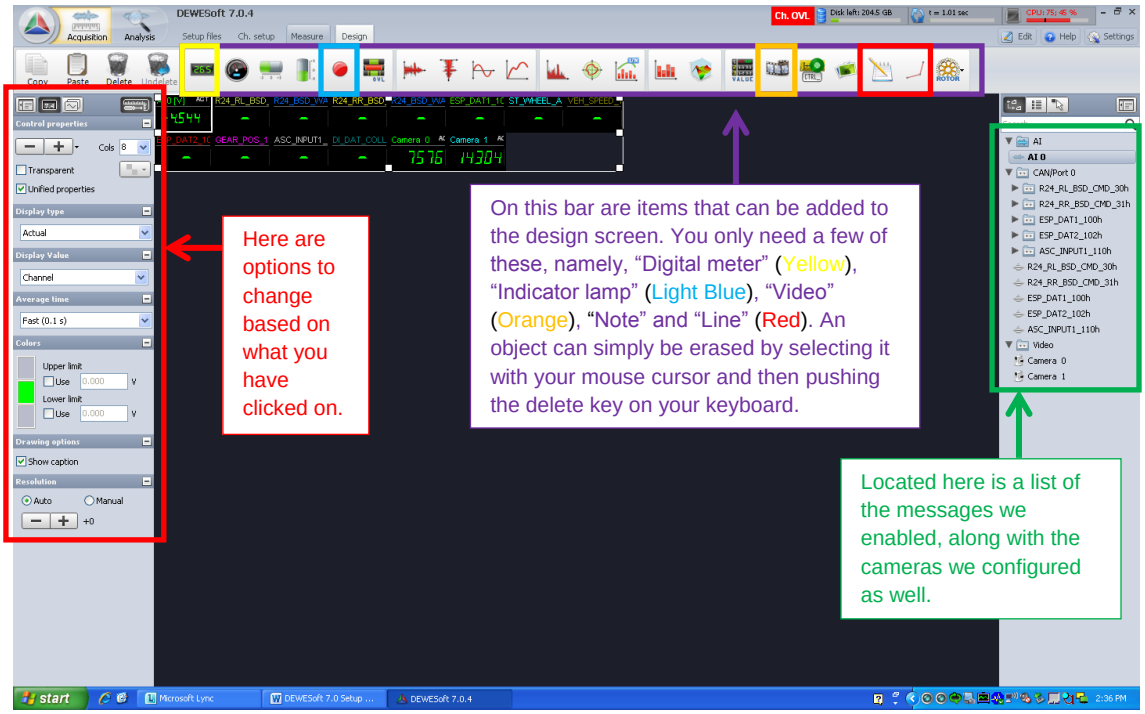
25. From here you will want to name the folder. The recommended naming for the folder is: VehicleName_Date_TestName. Within this folder you will want to make 2 more folders. These 2 folders should have the names: Data and Grid.



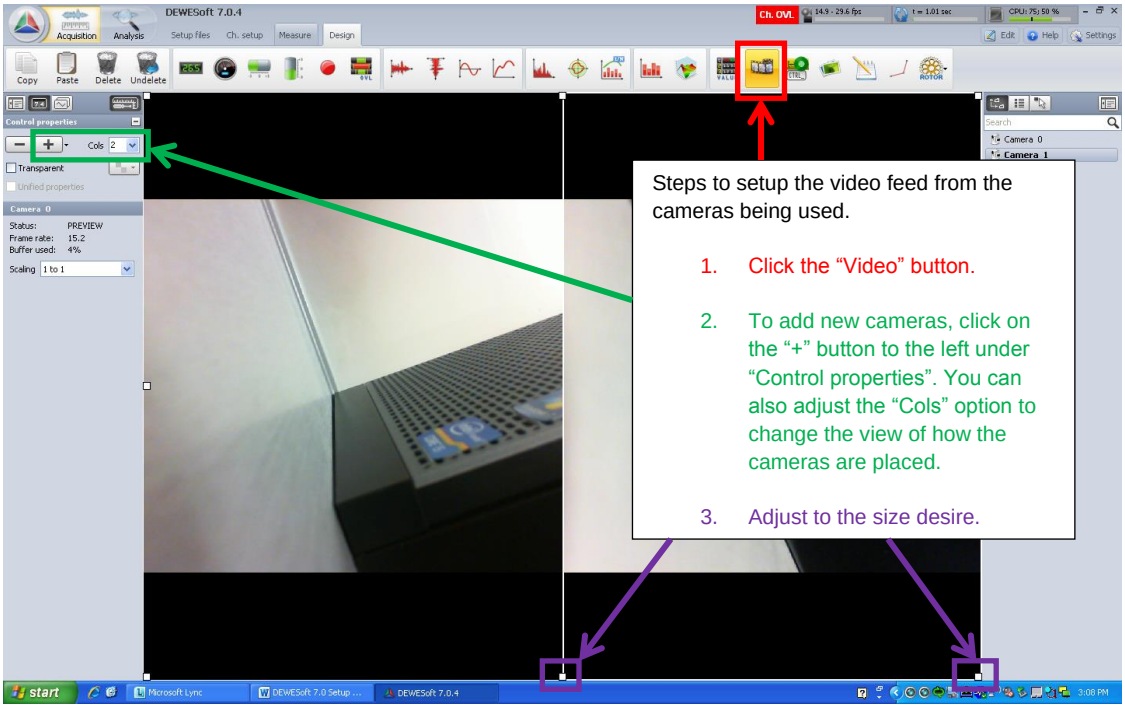
26. Next we will want to setup up the “Measure” tab on the top ribbon bar.



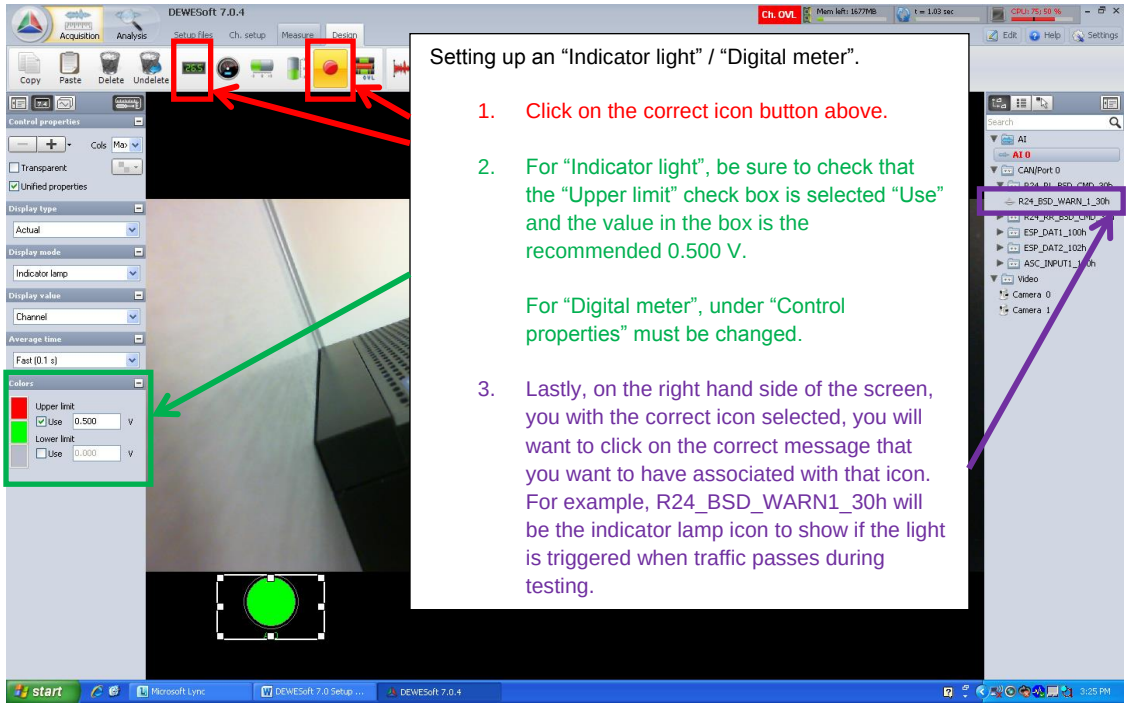
27. From here you see this screen. This is where you will design layout and messages you would like to see displayed as well as the picture for the cameras being used for the test. The next few screenshots will step you through the process of creating your layout.



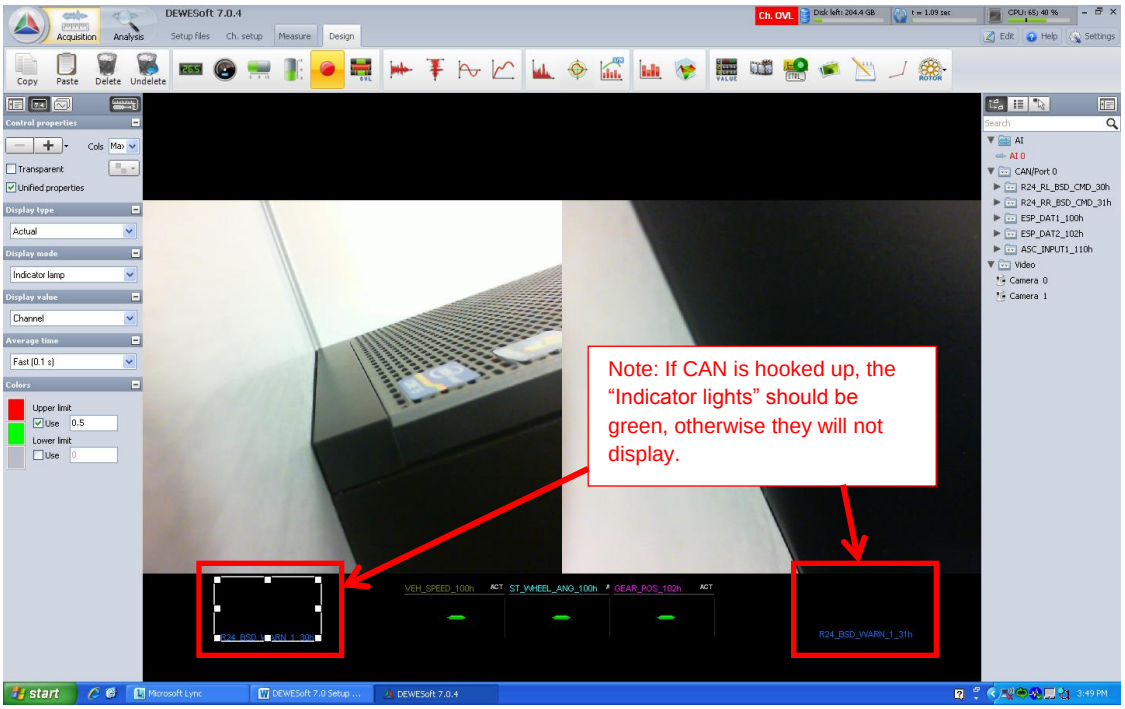
Say, first you want to configure the camera screens. First you will select the “Video” button above.



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.

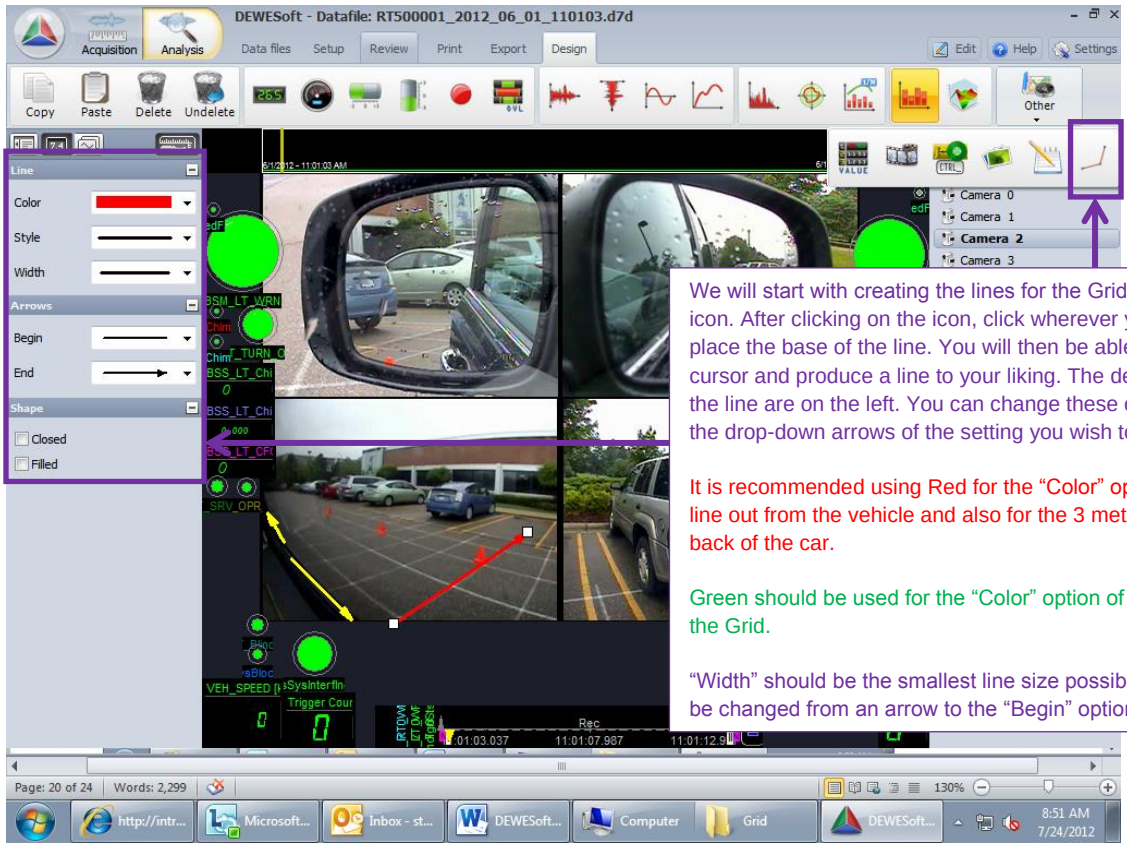


28. This next section has to do with the Grid folder we created. You will have to make a Grid setup and save it for reference and also to get accurate readings when analyzing data. The Grid will use the last 2 icons, "Note" and "Line". The Grid is very important.

Usually the Grid will be setup right before testing. I will not be doing this for the manual, but instead will load a previous Grid file and show the steps to go about setting up the Grid. This is usually done outside in a parking lot. Lines are painted on the ground in the parking lot in a grid pattern and each line is 1 meter apart.

For the Grid you will need to setup one side at a time. In the example being used, we will start with the left side. To start, cones should be placed out on the Grid at 3 different distance marks. All cones are 3 meters out from the side of the vehicle and then 0, 3 and 7 meters from the rear of the vehicle.

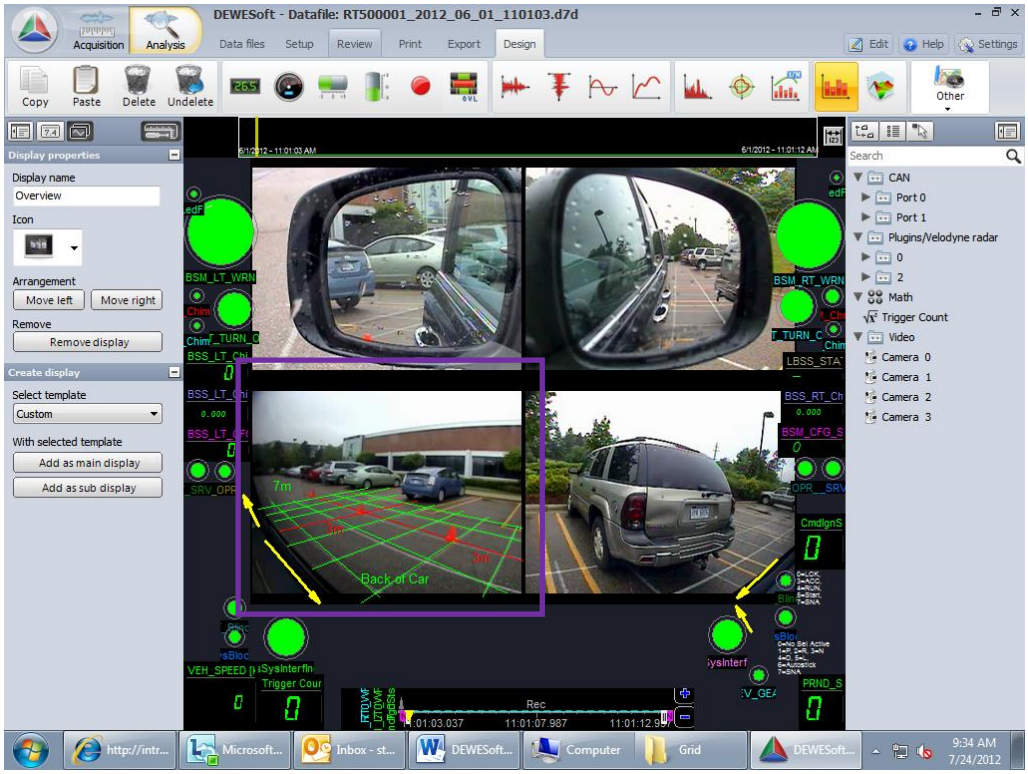
To create the Grid, you will keep the "Design" tab on the ribbon selected.



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

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.