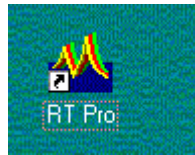
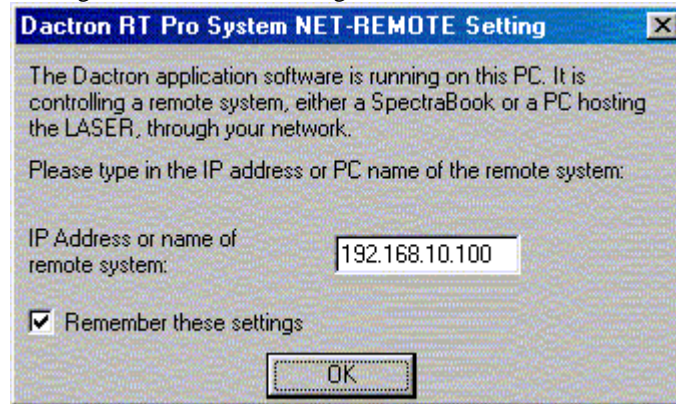


# Dactron SpectraBook Quick Start Tutorial

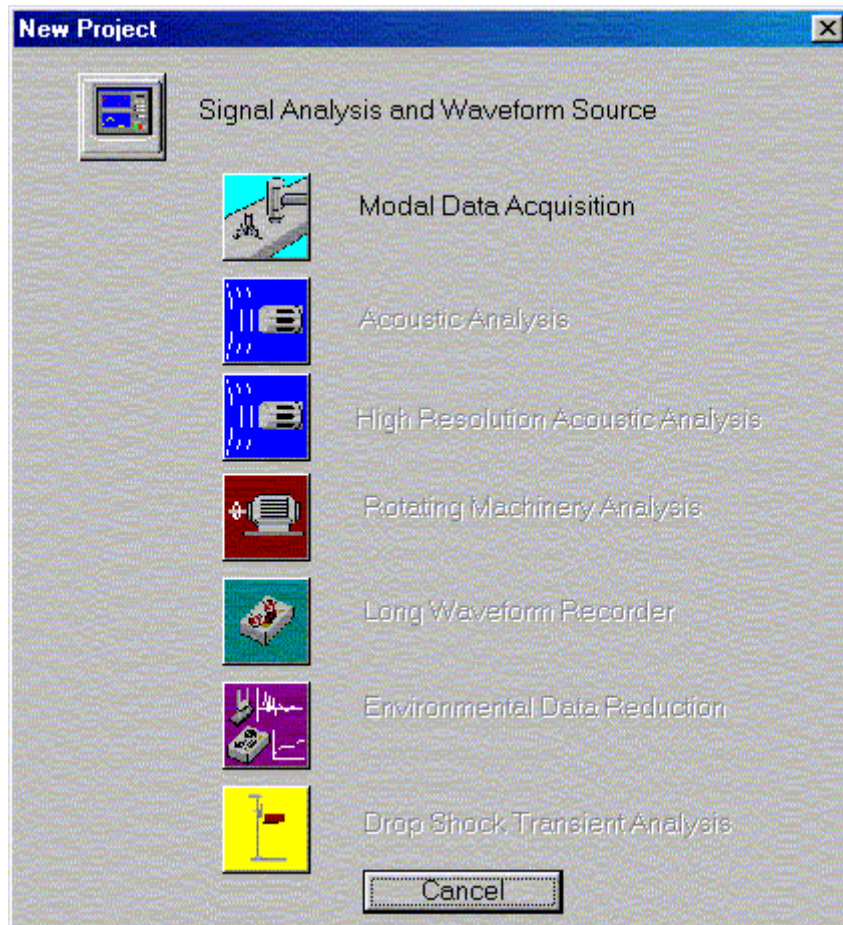
To start the Dactron SpectraBook software, double click the RTPro Icon .



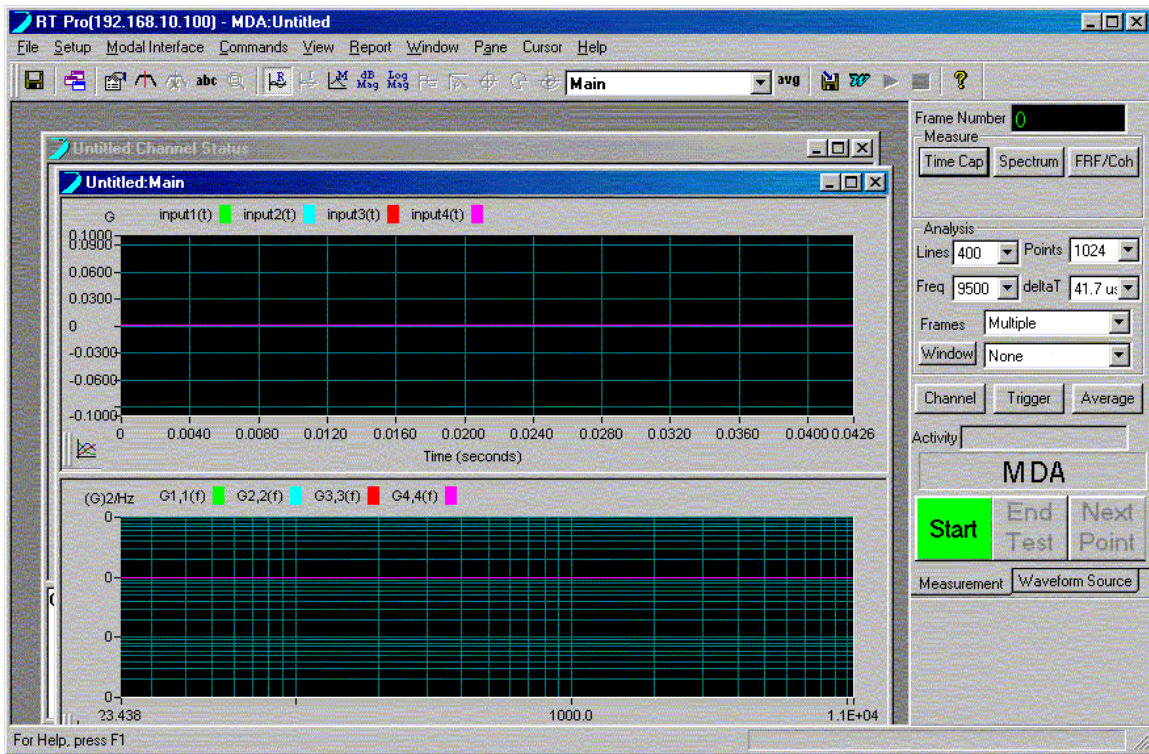
You will then see the a dialog similar to the following.



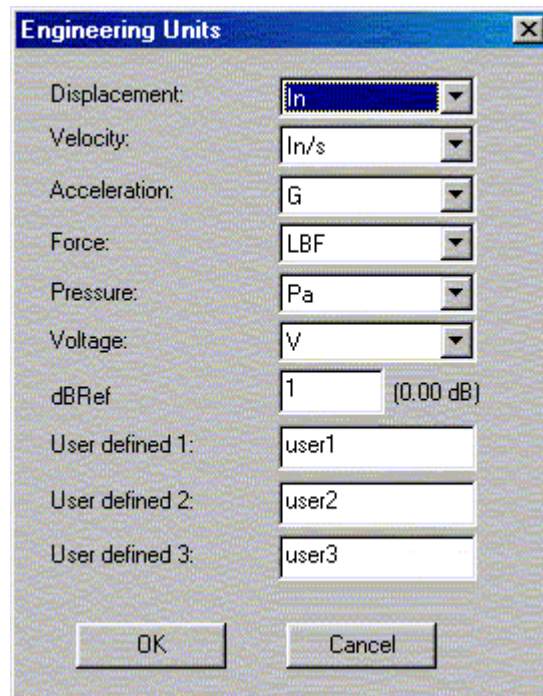
Provided the SpectraBook has been set up correctly on your network, just click OK. The program will then start up with a blank window. Select "File->New" to create a new project. You will then see the following dialog.



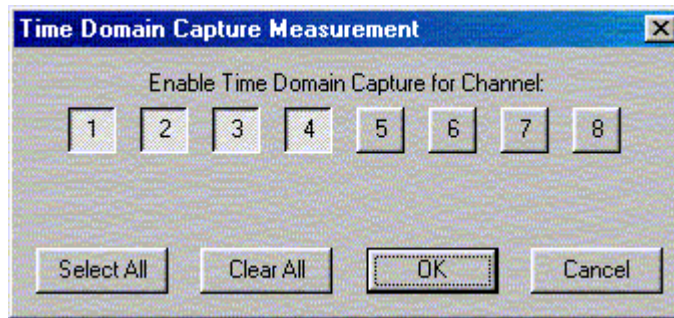
Select the "Modal Data Acquisition" button. A default project will be created and you should see a window similar to the following.



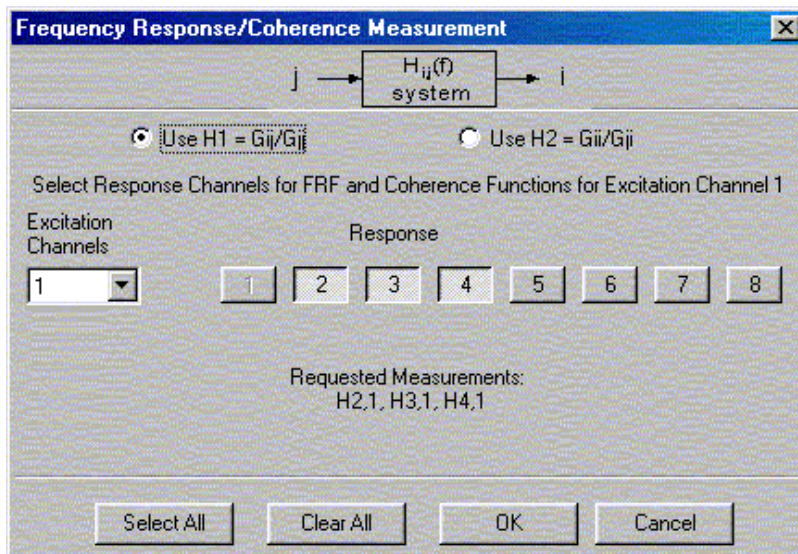
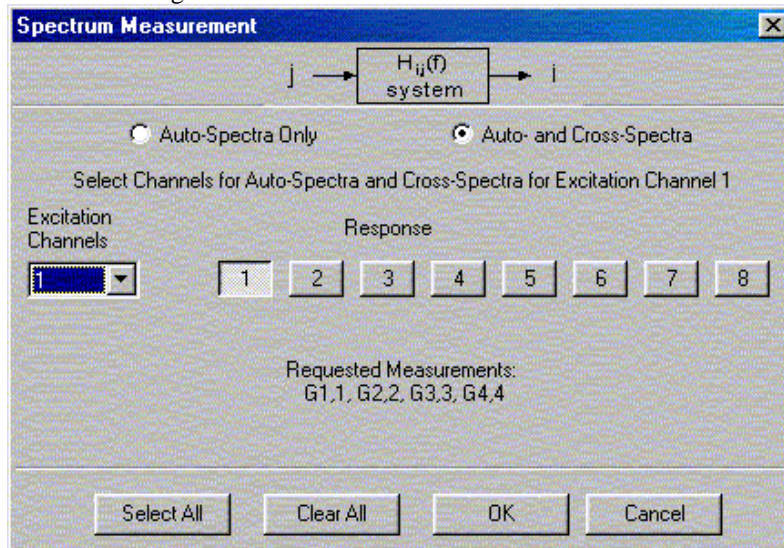
Generally speaking, the sequence of the following steps is not critical, though they are somewhat logical. The first thing that should be done is to set up the correct engineering units for the experiment. This is done by choosing "Setup -> Engineering Units" from the menu bar. A dialog similar to the following should then appear.



After making the appropriate selections, you can then choose which time histories you want to capture by selecting the "Time Cap" button. A dialog similar to the following should appear.



Simply select which channels you want time histories for. Next, you can select the “Spectrum” button to define which channels you want to calculate spectra for. The dialog should be similar to the one below. Similarly, you can select which frequency response functions (FRF’s) and coherence function you want calculated, as shown in the dialog box below.



Next you can choose the sampling rate and duration for your test by selecting appropriate values in the “Lines” / “Points”, “Freq” / “deltaT” listboxes.

Select either “Single” or “Multiple” frames, depending on if you are doing a one-shot test or an experiment where you will do many tests and average the results. You can also select a windowing function to be used in the calculation of FRFs and spectra.

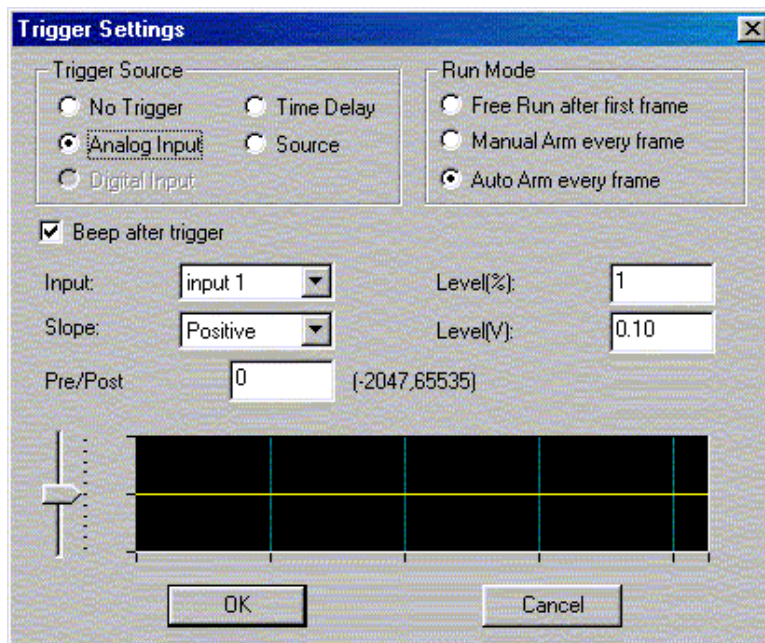
Next, and very importantly, select the “Channels” button to set up the type of measurement for each channel. A dialog similar to the following should appear.

The screenshot shows a dialog box titled "Channel Parameters" with a close button (X) in the top right corner. The dialog contains a table with 10 columns: Input, MaxVolts, Quantity, EU, mv/EU, Coupling, I.D., Location, Point, and Axis. There are 8 rows of data. Below the table is a horizontal scrollbar. At the bottom of the dialog are three buttons: "Fill Down", "OK", and "Cancel".

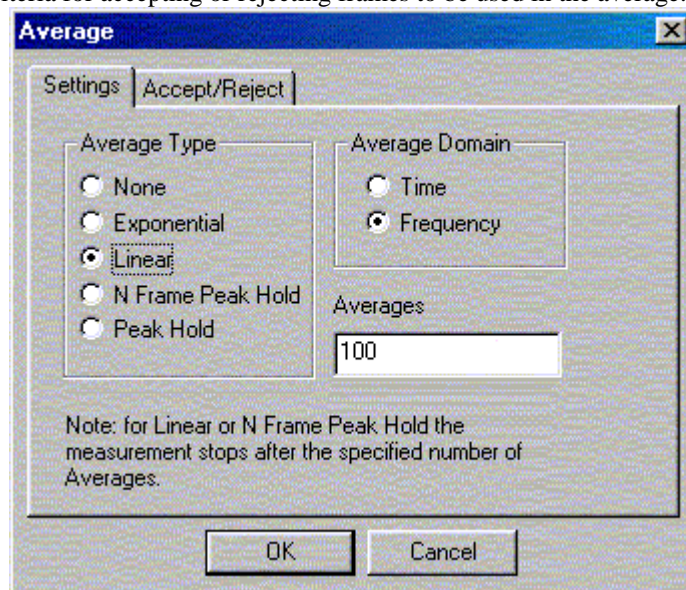
Input	MaxVolts	Quantity	EU	mv/EU	Coupling	I.D.	Location	Point	Axis
1	10	Acce.	G	100.00	DC	Accel.	Center	1	Y+
2	10	Acce.	G	100.00	AC			2	Y+
3	10	Acce.	G	100.00	ICP			3	Y+
4	10	Acce.	G	100.00	AC			4	Y+
5	10	Acce.	G	100.00	AC			5	Y+
6	10	Acce.	G	100.00	AC			6	Y+
7	10	Acce.	G	100.00	AC			7	Y+
8	10	Acce.	G	100.00	AC			8	Y+

Here, you define the expected voltage range for each input (10V, 1V, 0.1V), the quantity you are measuring (acceleration, force, velocity, ...), the engineering units, the sensitivity of the transducer, and the coupling (for most accelerometers, this will be ICP).

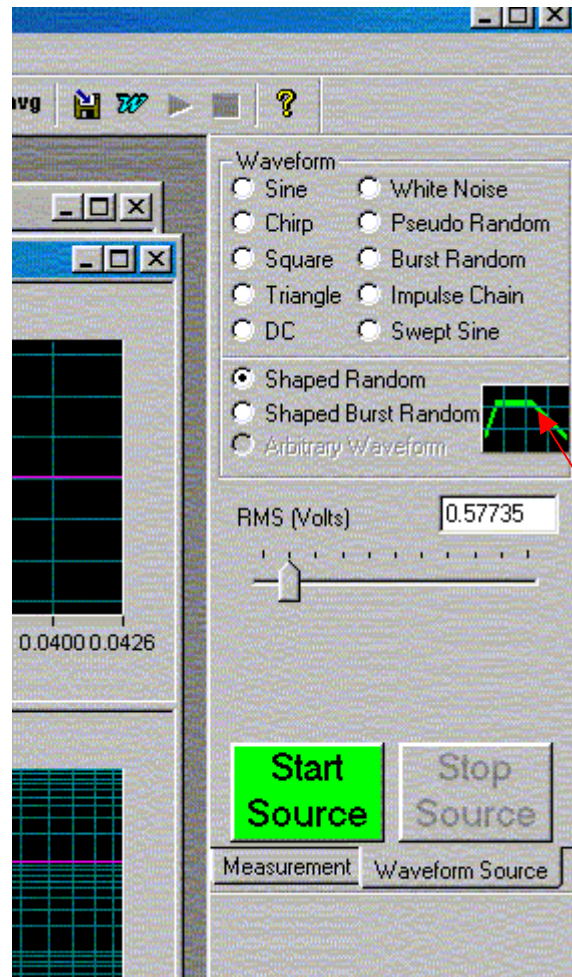
If you want to trigger the start of data collection, select the “Trigger” button. The dialog should look similar to the following. You may have to experiment with some of the values to get the trigger sensitivity you need.



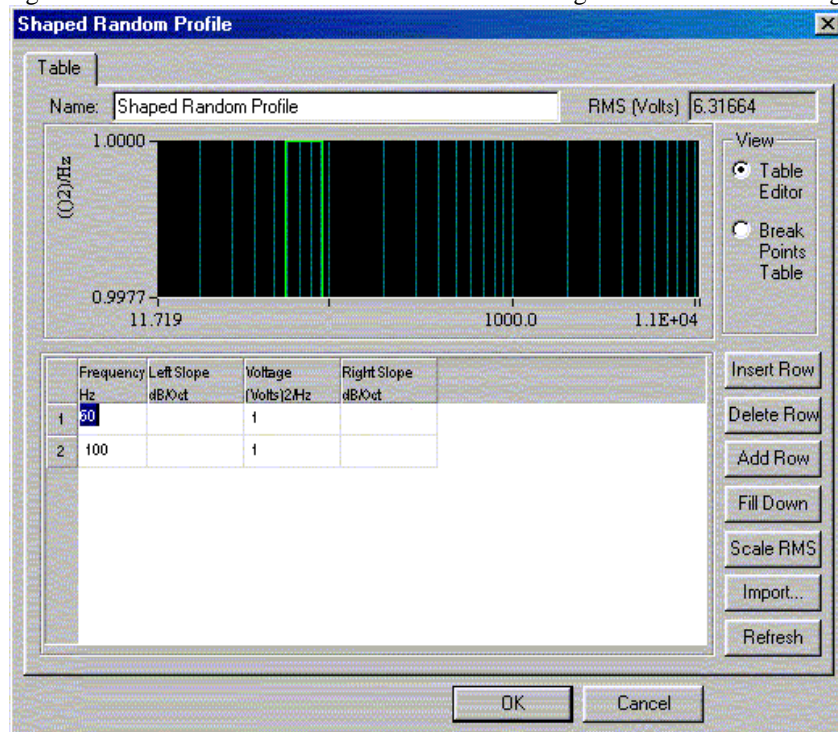
If you selected “Multiple” frames, you can define how to average the frames by selecting the “Average” button, which produces a dialog similar to the following, where you can select average type, domain, and number, as well as criteria for accepting or rejecting frames to be used in the average.



Now that your inputs are set up, the next task is to set up the source signal, if any, that you will be using to excite your system. Select the “Waveform Source” tab (adjacent to the “Measurement” tab), and the right hand side of the window now should look similar to the following.

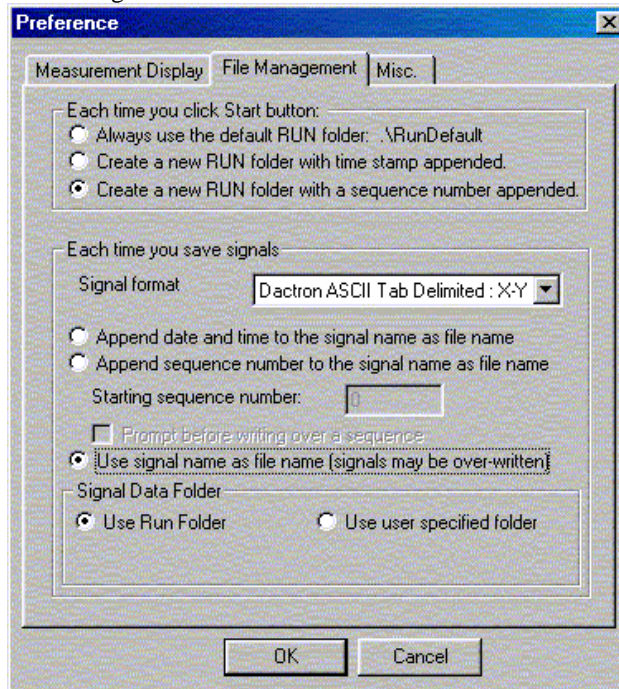


Most of the waveforms are fairly straight forward. One of the most common excitations is the “Shaped Random”, where the user needs to enter the desired frequency characteristics for the random signal. This is done by selecting the button denoted with the arrow above. A dialog similar to the following will appear.

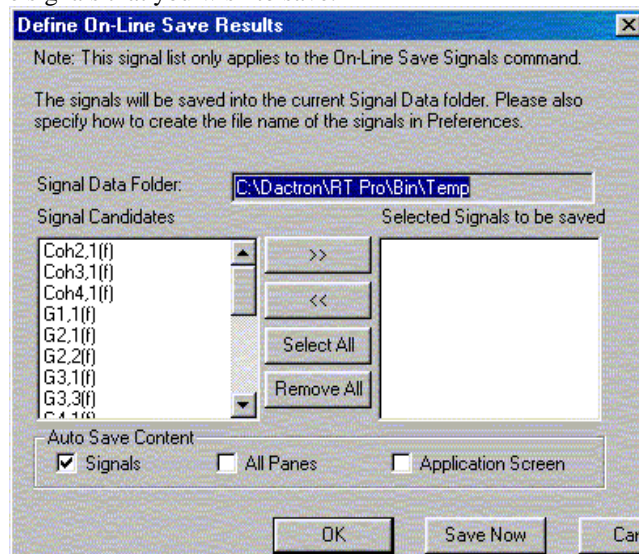


Here you enter the frequency/magnitude pairs to define the frequency characteristics of the random excitation. The source is started with the “Start Source” button, and stopped with (you guessed it) the “Stop Source” button. When you start and stop the source will depend on the type of test you are doing, as well as the triggering you have selected.

Before running the test, we need to decide what data to save and how and where to save it. Select “Setup -> Preferences” from the menu bar, and then select the “File Management” tab. You should see a dialog similar to the following.



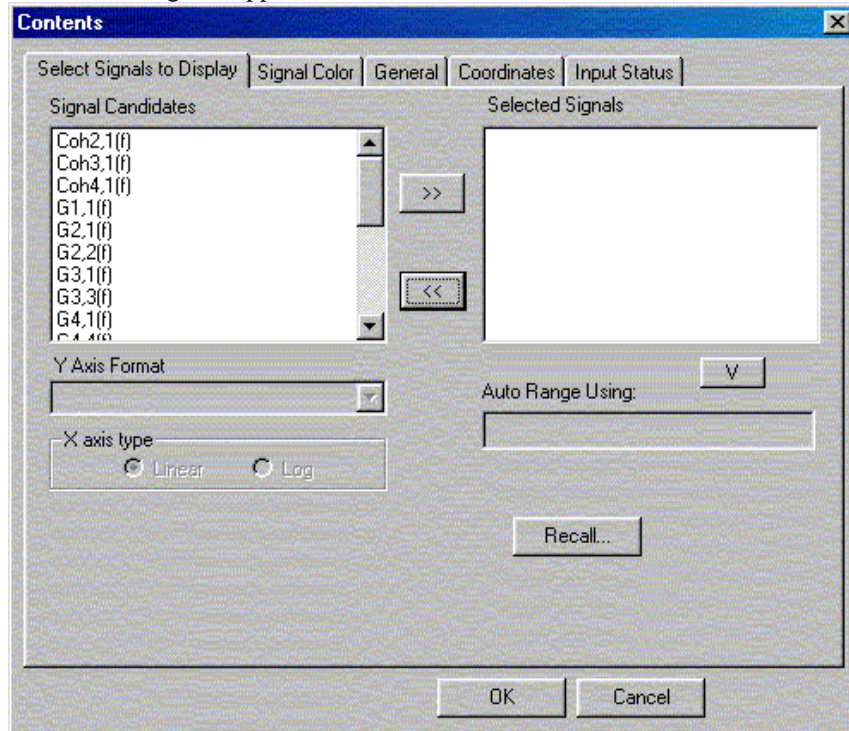
The settings shown in the above dialog are generally appropriate. That is, a new folder will be created for each test, numbered sequentially. The data will be written in ASCII format, for easy portability, and each signal is stored in a file with the same name as the signal. Next, we need to choose exactly which signals to save. This is done by selecting “Commands -> Define On-Line Save Results”. A dialog similar to the following should appear. Choose the destination folder (remember, each test will be put in its own subfolder), and select the signals that you wish to save.



Once you run your test, you can save results by selecting “Command -> On-Line Save Results Now”, or by pressing F7.

You are now ready to run your test. Depending on the triggering you have selected, you might start the measurement before the source (if any).

Once results start to come in, you can view them in the plot windows. Right click over a plot area, and a dialog similar to the following will appear.



You can choose what signal to display, along with a host of formatting options. You may have to empty the “Selected Signals” list to see all available “Signal Candidates”.

Once you have all the setting for your test the way you want them, don’t forget to save your project so you don’t have to go through all this again unnecessarily!