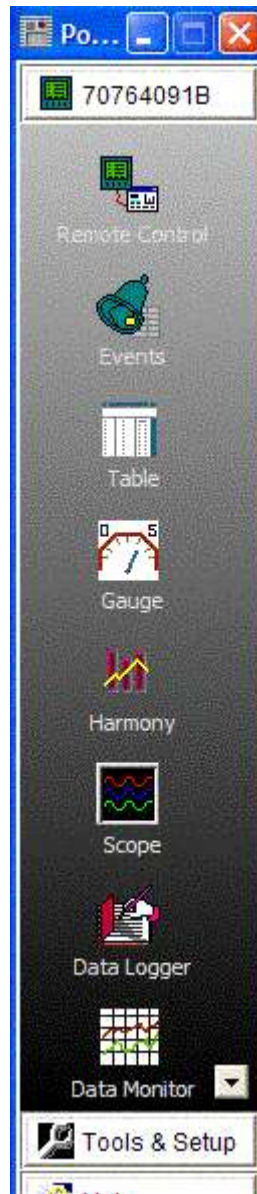


Setting up measurements with power IQ

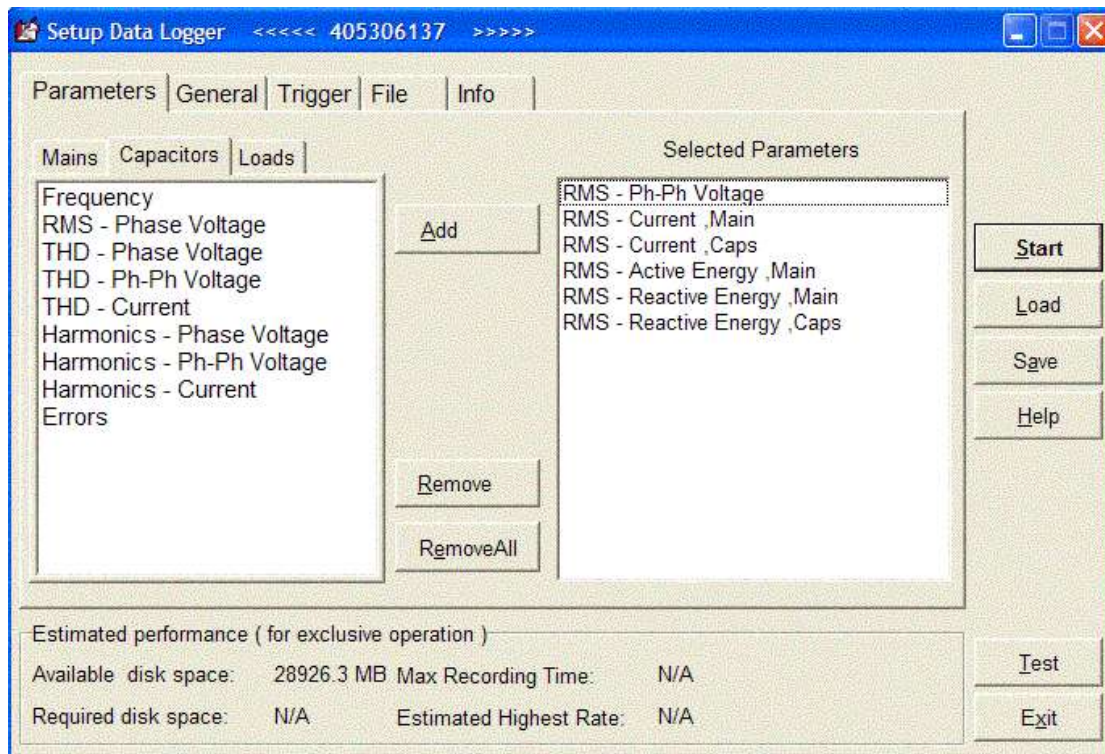
Use the PowerIQ manual to set up the PowerIQ software to work with the controller of the Equalizer. On completion of the process ("Auto Setup") you should see the serial number of the controller at the head of the PowerIQ pane. Click on the serial number tab, to access the application list; Remote Control, Events, Table, Gauge, Harmony, Scope, Data Logger, etc.

Run either "Remote Control" or "Table" applications for a couple of minutes, in order to establish that you have stable communications with the controller.



Close the "Remote Control" or "Table" application you've opened.

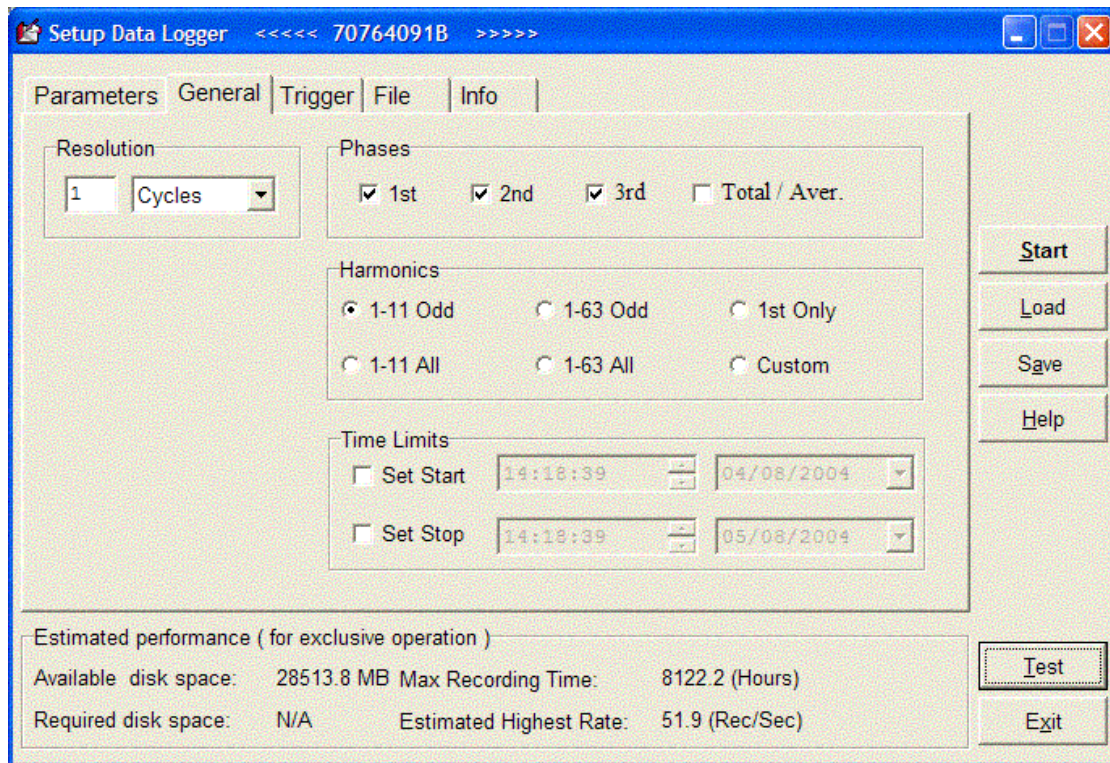
To set up measurements, select "Data Logger" application.



Select the parameters you wish to record from the "Parameters" tab. Selecting parameters is done by highlighting the desired parameter and clicking "Add", or by simply double-clicking on the desired parameter. The selected parameter will move from the left side of the screen (Available Parameters) to the right side (Selected Parameters). In a similar way you can unselect parameters, by clicking "Remove" after highlighting a parameter which is on the right side.

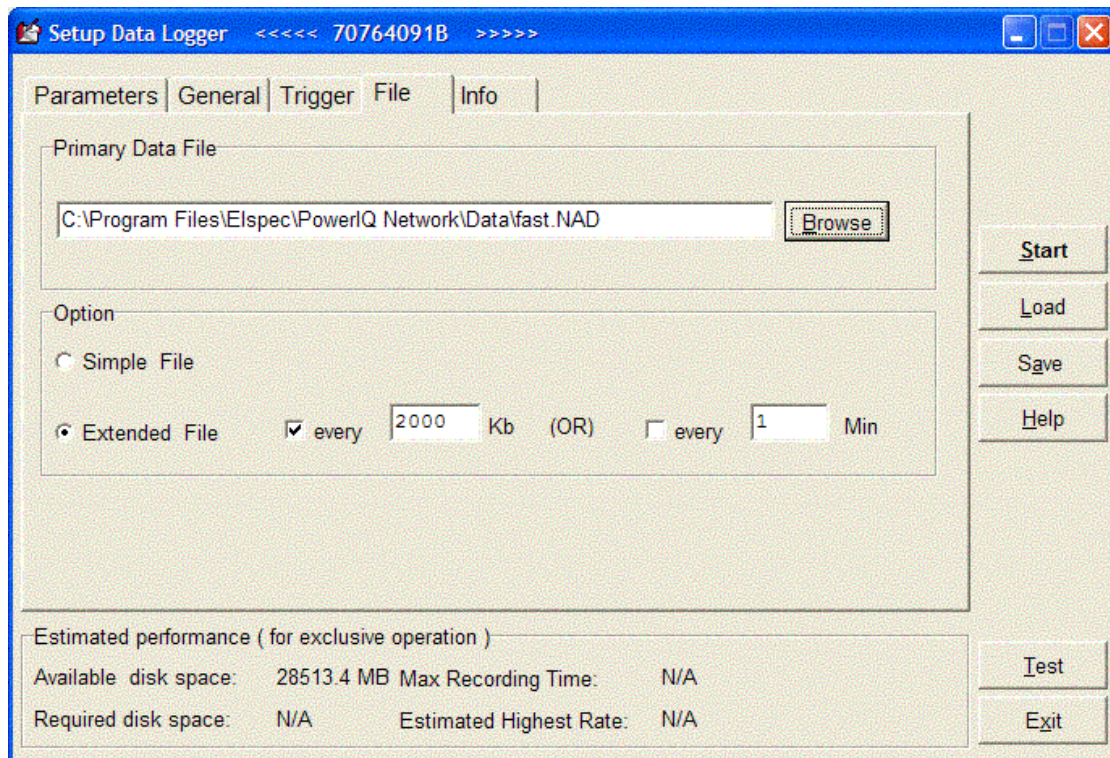
I recommend that you select "RMS – Ph-Ph Voltage", "RMS- Current", "RMS – Active Energy" and "RMS – Reactive Energy" from the "Mains" tab (4 parameters), and also select "RMS- Current" and "RMS – Reactive Energy" from the "Capacitors" tab (2 parameters). The final list of parameters (6 parameters) should look like the list in the picture above.

At the bottom right corner you have the "Test" button. Pressing this button will activate a communication test, which will eventually display the "Estimated Highest Rate" (as shown at the bottom of the picture above – a number should display there). In order to measure cycle-by-cycle, you should be able to achieve a recording rate of 50 Rec/Sec at least (at 50Hz network). If you cannot reach that figure, you can try selecting fewer parameters and repeat the test.



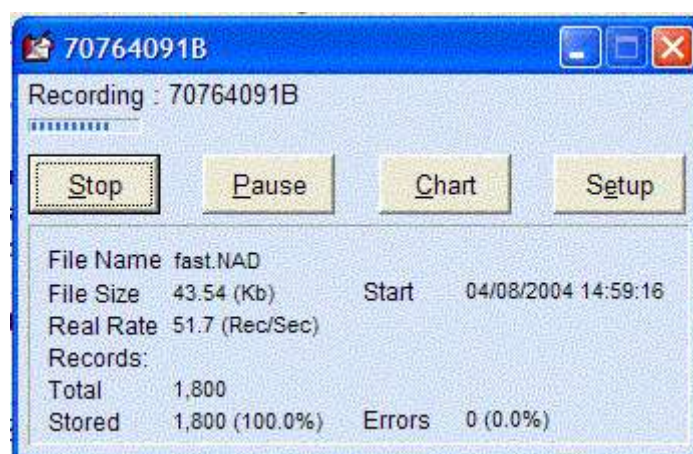
On the "General" tab you define the target "Resolution". I always keep it at the default of "1 Cycles", unless I deliberately want to create a small measurement file. From "Phases" I suggest that you uncheck the "Total/Aver" box. There is no importance to the total Q or P in an unbalanced application such as Spot Welding. We are more interested in what is going on with the individual P's and Q's. If you uncheck the "Total/Aver" and repeat the "Test", you'll probably discover that you've improved the "Estimated Highest Rate" of download. So, this is another way to improve the rate. You may gain the ability to add one more parameter to your measurement, by giving up the "Total/Aver", still maintaining 50 Rec/Sec rate. Under "Harmonic" you can select the harmonics you want to record (if you have selected one of the harmonics parameters at the "Parameters" tab). There are a few predefined sets of harmonics (Even, Odd, All, 1-11, 1-63), or you can handpick each harmonic you want to record, by selecting "Custom".

"Trigger" and "Info" tabs are not so important at this stage. You may want to record some notes in the "Info" tab. These notes will be added to the text summary file, which will be created along with the measurement files.



The "File" tab is very important. You won't be able to record until you name your measurement file. Click "Browse" to take you to the default folder (which is "Data" under the PowerIQ folder, unless you've changed it) and name your file. The size of the file is unlimited. You may conduct long measurements and create a huge file, which afterwards your computer won't be able to handle. That is why I suggest to use the "Extended File" option and shown in the picture above. Define "every 2000kb". This way PowerIQ will break the measurement to 2Mb files.

You are now ready to run "Test" one last time, to see that you are happy with the rate. After that, clicking on "Start" will start recording.



As long as you have not clicked "Stop", you'll see this progress window. It shows the status of the measurement. You can also refresh your memory and see which parameters you have selected to record, by pressing "Setup". Pressing "Chart" will launch the "Data Monitor" application and there you can select parameters to view and by pressing "On-Line" seeing

your measured parameters graphs as these are recorded. I don't recommend doing that. This stresses your computer. I prefer leaving the computer to record and viewing the measurements afterwards.