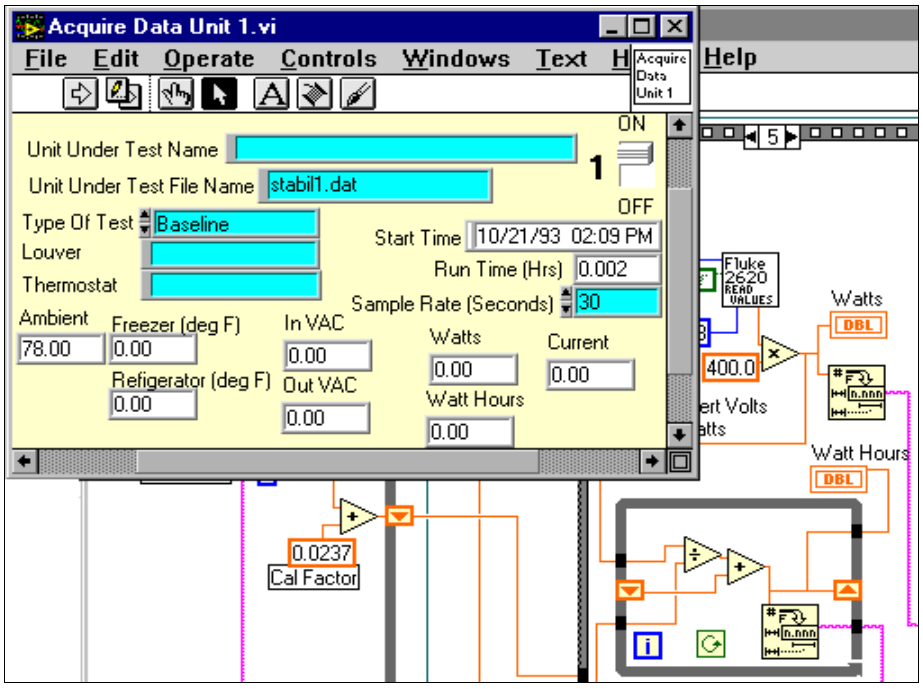
ASPEN TEST ENGINEERING, INC.

Application Note #601

The Problem:
The customer's product was an energy saving device for refrigerators. Testing of the device for actual energy savings was done by a third party. The customer wanted to move all testing in-house for greater control and cost-savings. The customer had been receiving just raw data from the third party and wanted an integrated solution that would provide a quick and easy means of testing a variable number of units and then creating professional looking reports after the testing was complete.

The Solution:
LabVIEW software from National Instruments was chosen to be the language for both the test and data analysis process. The refrigerator units were placed inside a controlled temperature chamber and a Fluke Data Bucket was used to acquire ambient, freezer, and refrigerator temperature, as well as voltage and current consumption. The main LabVIEW panel allowed an operator to test up to four different refrigerators with each unit having independent start and stop test times. Data was continually written to disk to avoid the need for repeating an entire test cycle in case of power loss or computer malfunction. This was important since a test cycle could be as long as twenty-four hours. When a test was complete, the logged data was imported by another LabVIEW program for post processing data analysis. The data analysis program calculated such parameters as energy consumed and energy saved as compared to a baseline unit. When the analysis was complete, the data was presented graphically and an operator could optionally create a hard copy report as well.



Hardware Used:
Fluke 2620A

Software Used:
National Instruments LabVIEW

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