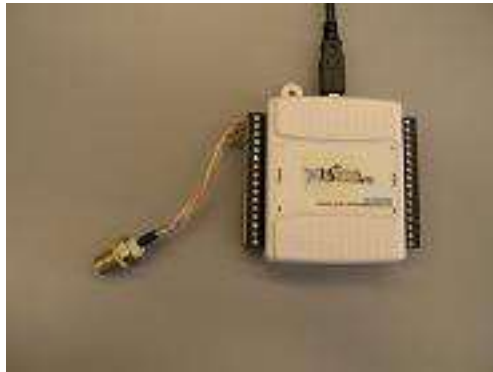**Using the Virtual Voltmeter**
(SGM 2007-09-18)

1. About the Virtual Voltmeter and Setting up the Hardware

The Virtual Voltmeter is a custom made voltmeter that can be used for recording voltage readings frequently over long periods of time. The program was written using LabView, which is a software package designed for scientists and engineers to be able to quickly format and process real-time data. The software works with a Data Acquisition card (DAQ card, shown below). The card has input ports all around and connects to a computer through a USB port.
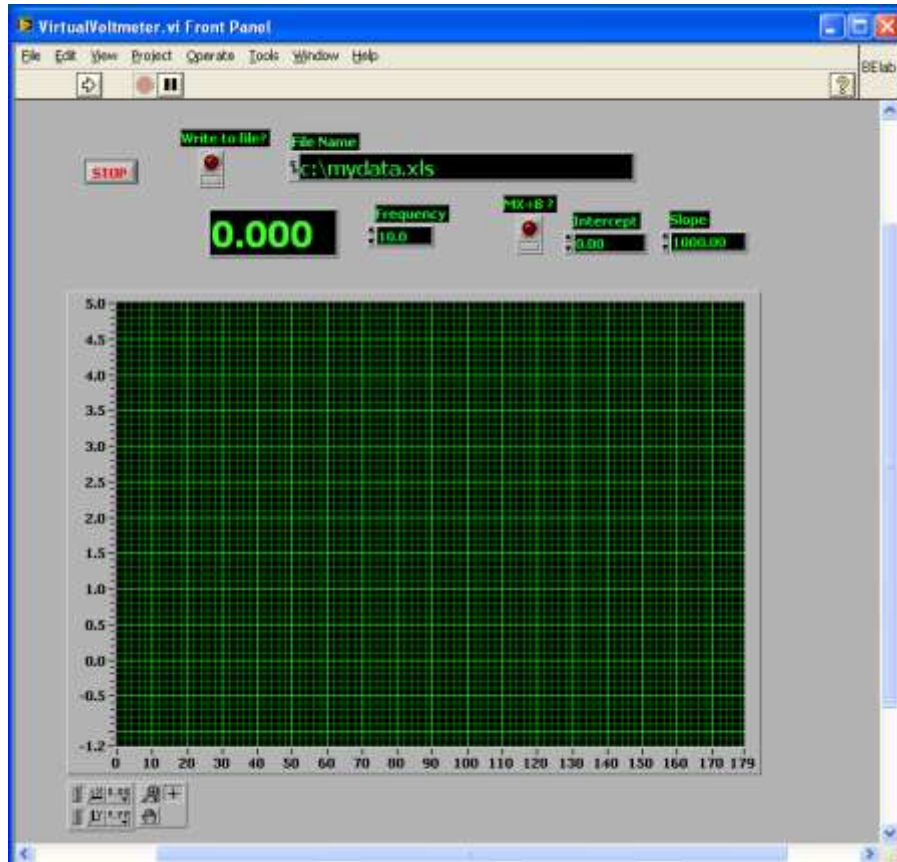

Our DAQ cards have two wires connected to it, one to an Analog input channel and the other to ground. The wires terminate to a BNC connector to interface with coaxial cables. For our setup, the DAQ card is primarily used to accept analog data and convert it into digital data so that it can be processed by the computer.

For this setup, you will need a BNC to alligator clip cable (shown below). The one end of the cable connects to the BNC connector attached to the DAQ card and the other ends attach to your circuit. The black lead MUST be connected to your circuit's ground and the red to the signal.

2. The VirtualVoltmenter.vi

To open the VirtualVoltmeter go to START->Programs->Course Specific Software->BE->BE Lab Files->BE209 and then double click on the Virtual Voltmeter icon. See the picture of the program below.

- For this program, you should not use any of the various menus. These menus are for the LabView development package and not for the VirtualVoltmeter.vi.

- Once you connect your circuit to the DAQ board, press the right pointing arrow at the top left of the screen, just below the menu row to run the program. You will see a graph on your screen, and data being collected.

- To write to a file, click on the write to file button BEFORE running the program. Make sure that the File name is appropriate. You should save either to your ENIAC drive (S: drive), C:\temp or a flash drive. Note that if you save to C:\temp and logout of your computer, your data will be lost.

- To stop the program, press the stop button in the screen. Do NOT press the 'stop sign' button below the menu row. If you press the 'stop sign' button while trying to write data to a file, the data will be lost.