**EE4951W – Battery Power Monitor**

**Demonstration Description**

We will show a system composed of a wireless modem, a power-sensing device and an LCD where voltages, currents and power calculations will be shown. The purpose of the power-sensing section is to monitor the voltage across the battery and the current drawn from it, which will then be digitized by a microprocessor that will perform the power consumption calculation of the whole device.

The power consumption will be stored in an SD card and displayed on an LCD for real-time readings as well as maximum, minimum and average measurements. Additionally, the readings will also be sent to a laptop via a USB cable where statistical calculations will also be displayed.

A system comprised of a laptop, cellular modem, and a load-box will be used to demonstrate the functionality of the battery power monitor (BPM). The BPM will monitor the voltage and current of the cellular modem during transmission and log all data to an on-board SD card. In addition to data logging, minimum, maximum, and average values of the power consumption will be displayed on an attached LCD display. These statistical calculations can be reset via a push-button. Real-time sensor data will be sent over USB to the laptop and displayed on screen. In addition to monitoring the cellular modem, the general nature of the BPM will be demonstrated by using a load box to simulate a variety of different loads.