



---

## *Integrating LabVIEW, TinyOS and Expansion Modules to the PHOTONS Sensor Platform*

Daniel Wessling<sup>1</sup>, Stephen So<sup>2</sup>, Frank K. Tittel<sup>2</sup>

<sup>1</sup> CSEE Department, University of Maryland Baltimore County, Baltimore, Maryland USA

<sup>2</sup>Electrical and Computer Engineering Department, Rice University, Houston, Texas USA





# The Basics of What? Why? How?



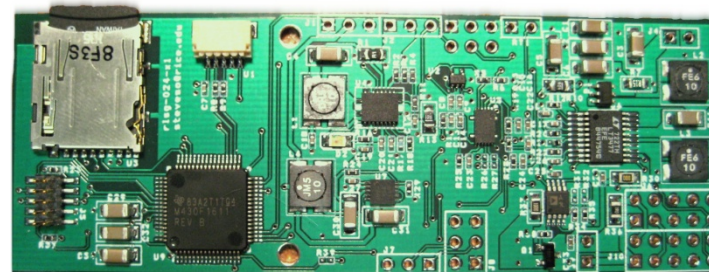
## WHAT!

Program a small and inexpensive wireless sensor  
Integrate LabVIEW and TinyOS  
Have a high efficiency QCL run off of a chargeable battery



## Background

- Sensors transmit data wirelessly using Time Division Multiplexing (TDM)
- Designed a power expansion board that allows the sensor to have functions such as:
  - Solar-rechargeable Li-Ion battery
  - GPS capability
  - 'microSD' card module for extra data storage
  - resolution measurements



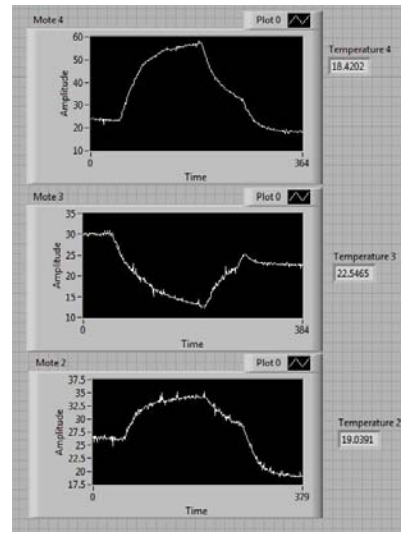
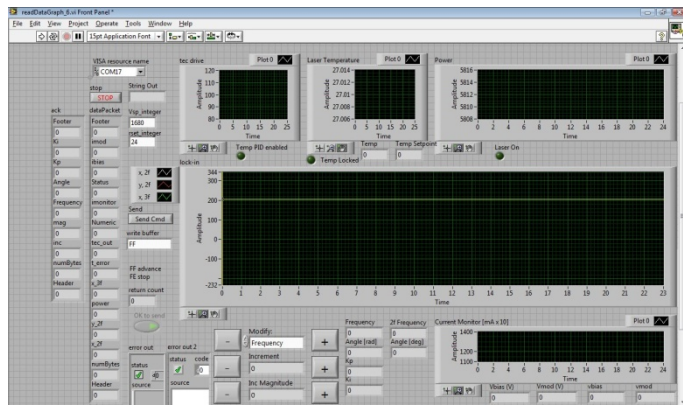


# The Basics of What? Why? How?



## Why?

- Breath samples could be analyzed through real time data and stored into memory from multiple patients simultaneously.
- Small wireless sensors can give a researcher more accurate and precise data. A few things that our program allows the user to see and control is:
  - Temperature of Laser
  - Power of laser
  - When to start/stop measurements
  - Global positioning (including altitude)





*How?*

---



Come see my Poster!

