



**EEL 4924: Senior Design**  
**May 28, 2009**

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# **Rocket Tracking and Recovery**

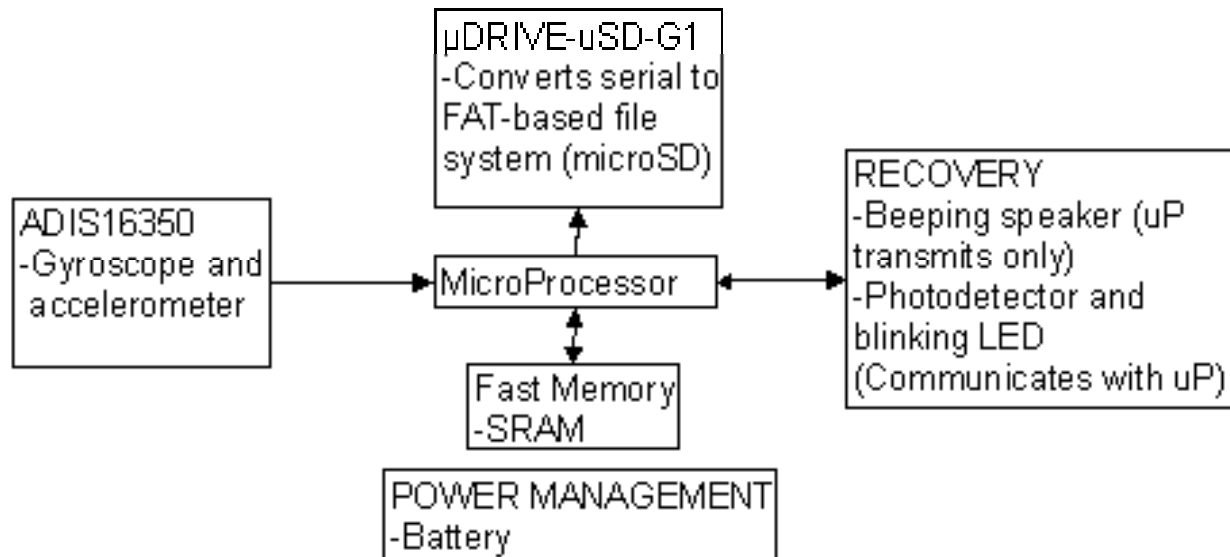
## **Rocket Men**

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Bryant Lam



# Project Overview

Our project consists of circuitry mounted within the nose cone of a lightning-triggering rocket that will record data about the velocity of the rocket. The system will also provide assistance in recovering the rocket after launch, by light and/or sound.





# Technical Objectives

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- The system needs to sample at 100 samples/sec.
- These samples will be stored in RAM, for speed, then transferred to non-volatile memory, an SD card, for long-term storage (1200 bytes/s).
- To aid in the recovery of the rocket:
  - With a clear nose cone, a photodetector circuit will be used to trigger a blinking LED at night
  - A noise (beeping) may also be generated

The system needs to be able to run for a long time from batteries while waiting for launch conditions and while waiting for recovery.



# Additional Considerations

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- Faraday cage around the electronics to protect them from lightning
- Padding to protect the electronics from forces encountered when launching and landing
- Limited space in the nose cone, need to fit components into a small space

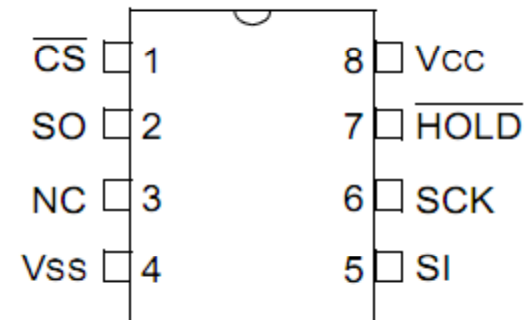
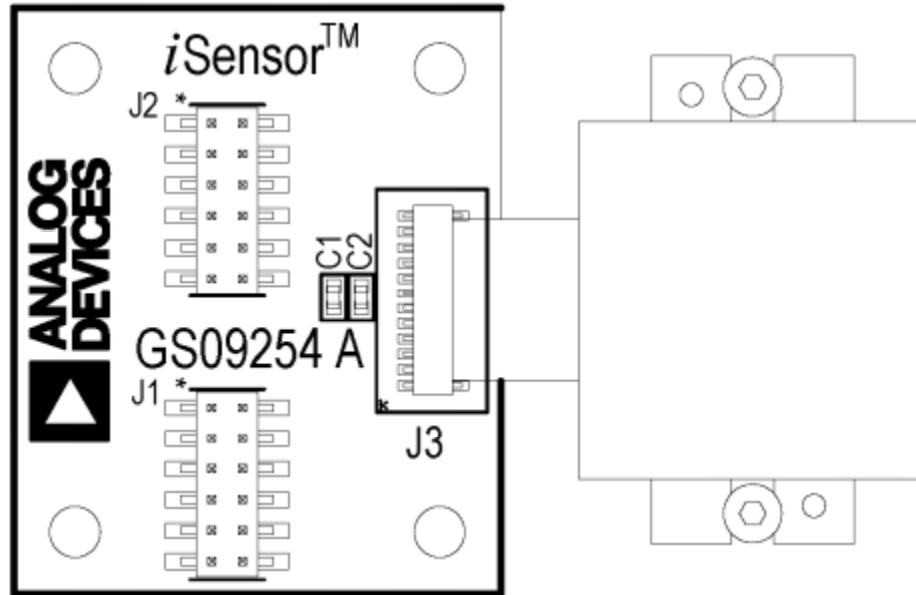


# Current Work

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- Breadboarding the gyroscope and interfacing it with the microprocessor (SPI)
  - Make sure the data is obtained accurately
- Breadboard SRAM to save gyroscope data (SPI)
  - Make sure the data is stored quickly

# ADIS16350





# Current Work

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- Breadboard SD card module (Serial)
  - Organize data so it can be easily read (into MATLAB)

# uDRIVE-uSD-G1

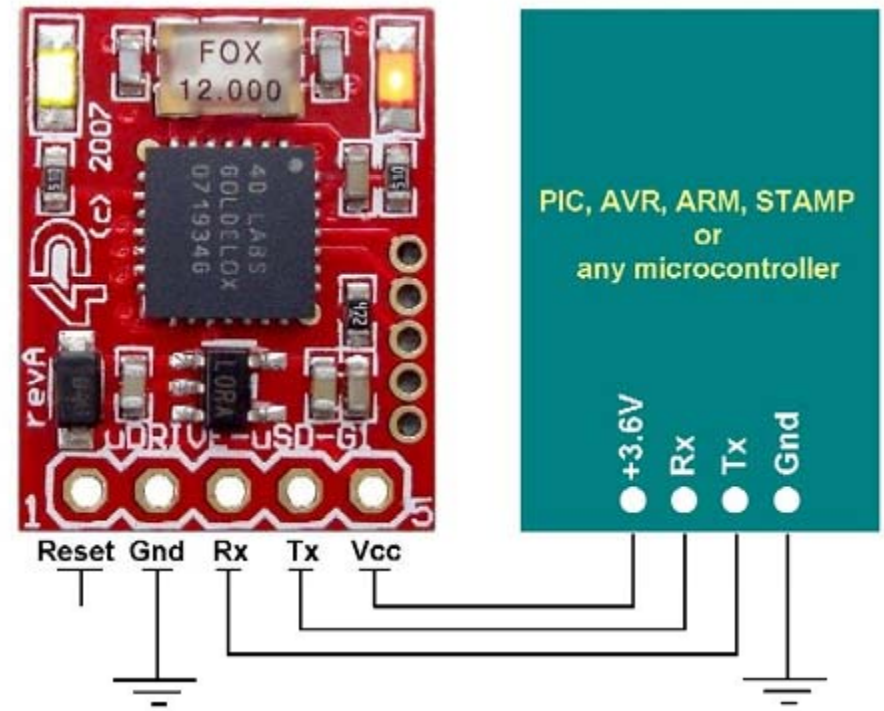
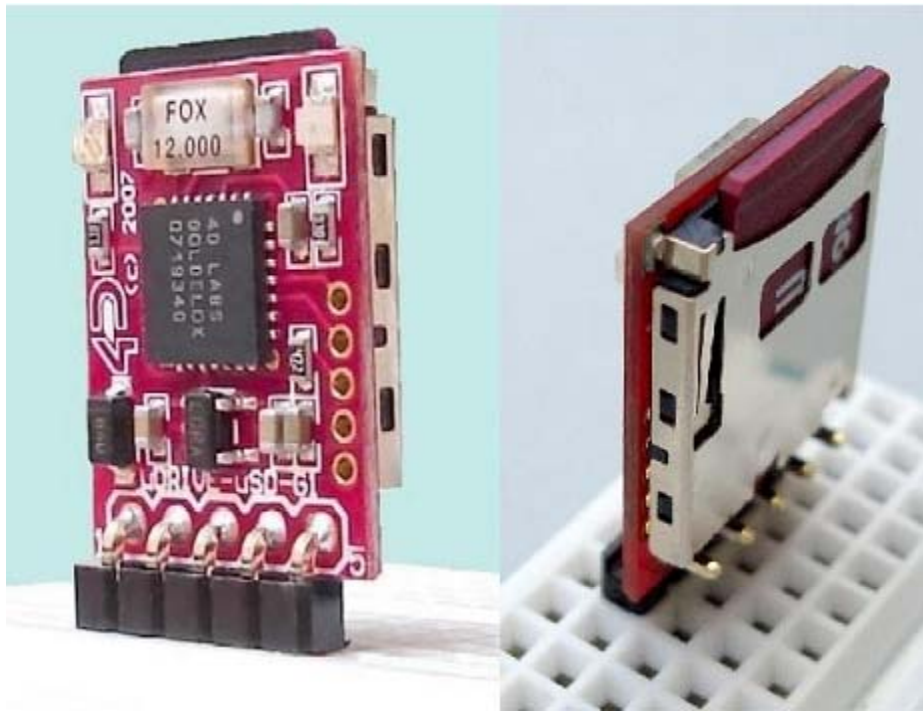


Figure 1: Typical Host Interface





# Gantt Chart

