Rocket Tracking and Recovery

Rocket Men

Terry Ngin
Bryant Lam
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

• 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

- 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

• 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

[Diagram of ADIS16350 sensor with pin labels]

Pinout:
- CS: 1
- SO: 2
- NC: 3
- Vss: 4
- 8: Vcc
- 7: HOLD
- 6: SCK
- 5: SI
Current Work

• Breadboard SD card module (Serial)
  – Organize data so it can be easily read (into MATLAB)
uDRIVE-uSD-G1

Figure 1: Typical Host Interface
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