

High Altitude Balloon

Midterm Project Presentation

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- Package still not recovered
- Continuous improvement of launch procedures and check list
- Suggestions for next flight
 - Have everything tested and ready Wednesday before launch.
 - Do not launch unless there is at least 5 miles of visibility.

Redesign of Legacy Equipment

- Ground plane antenna
 - Lighter
 - 0.262lbs vs. 0.462lbs
 - Smaller Center Plate
 - 2x2in vs. 5.75x5.75in
 - Center Connector
 - N connector vs. BNC connector
 - Tuned to our packet frequency of 144.39MHz
 - Reached about 6 miles non line of sight distance

Redesign of Legacy Equipment

- Basic Stamp Board
 - Reduce number of GPS antennas and receivers for weight
 - From 3 down to 1
 - Code was re-written
 - Operates 1 GPS unit when originally operated 3
 - Added code to switch between camera at different altitudes
 - Easily affected by moisture

Two Packages

- Two packages carrying our experiments
 - First time sending two packages
 - Both packages rotate independent from balloon
 - Redesign the connection to the balloon
 - More helium usage to reach altitude rate of 1000ft/sec

Current Status of ATV Transmission

- Pin Wheel Antenna
 - Top and bottom plates
 - Brass plates vs. double side conductive PC board
 - Elements hold better onto the brass
 - Elements
 - 0.033 copper welding wiring
 - Non-insulated wire works better
 - Holds shape better
 - Tune to 427.25MHz frequency

Current Status of ATV Transmission

- Pin Wheel Antenna Continue
 - Not performing as well as we thought
 - Poor performance might be due to impedance mismatch
 - Distance test was about 200 yards
 - Could increase the Db gain with reflector
 - Building a different ground plane antenna for ATV transmission

Current Status of ATV Transmission

- Video Switching Circuit
 - Parts for circuit are in, almost
 - Digikey made a mistake on our order
 - PCB board is currently in progress
 - Talking with Dr. Riechers
 - Meeting with Dr. Riechers' assistant
 - Batch PCB is also making one

Growing Team

- 5 new Electrical Engineers
 - Divided into two teams
 - Power bus
 - Ring Antenna
- 3 new Mechanical Engineers
 - Continue work of current MEs
- 3 new Computer Engineers
 - Project to be determine



Questions