

Week II Report

Advisor(s): Gary Tuttle

Client: NASA Marshall Space Flight Center

Members (Roles): Isaac Johns, Ryan Bissett, Tom Henry, Luke Dahlman, Anh Ho, Dustin Pierce, Antjuan Buffett

Project Title: Remote Deployment Circuit and Mechanism for Lightweight CubeSat Solar Panels

Weekly Summary

Our main goals for this week were to talk with John Carr as a group to get a clearer idea of what exactly we need to do for the project so we can start brainstorming and meeting with our advisor more effectively.

Meeting Notes

From our conference call with John Carr:

- There aren't many hard requirements or written specifications to meet- just create a design that is as good as possible while still being feasible.
- Our design will be only the first iteration of potentially many before anything actually launches
- Focus is mainly on the communications and circuit, the boom itself is ancillary.
- Almost all aspects of design are up to us (digital vs analog, type of boom mechanism, etc...)
- NASA uses labview to simulate their designs, and so should we.
- Building a medium-scale (1-2ft long) model
- Timetable isn't set in stone, but having a paper design done before the end of the semester is very much preferred and need to leave plenty of time for on-site testing as well as shipping to have it tested by NASA.
- Keep notes on all of our ideas, even bad ones, so that engineers at NASA can review them later to see what they should and shouldn't look into more extensively.
- Read up on what being in LEO (Low Earth Orbit) will do to our electronics and see how grade 1 radiation hardened components differ from regular components.
- Normal CubeSats produce between 50W and 75W but 250 is optimal, at 250W/kg and 200-400W/m².
- Design everything to 120% tolerances.

09/15/2014 Group Meeting with John Carr

Duration: 1hr
Ho, Dustin Pierce

Members Present: Isaac Johns, Ryan Bissett, Tom Henry, Luke Dahlman, Anh

Purpose and Goals

- Gather some more specific instructions from John Carr as to what exactly we have to do for the project.

Achievements

- As a group we clarified what we'll need to do for the project and now know what to start researching so we can launch into the project. Having a loose timetable and advice from Mr. Carr also put that into some perspective.

Pending Issues

- Contact our advisor, Gary Tuttle, and see if he still wants to be our advisor now that the scope seems to have changed so much from what we originally expected (the circuit itself seems like it has much less emphasis on it than the communication aspect now).

Plans for Next Week

- Luke: Contact Professor Tuttle
- Isaac and Ryan: Weekly Group Report
- Anh & Dustin: Keep group on Task
- Tom and Antjuan: Manage Google Docs and Weebly site
- In addition, everyone will be researching and brainstorming ideas to pitch to our advisor and John Carr

Individual Contributions This Week

- Luke: Organized conference call with John Carr, attending meetings.
- Isaac: Edited weekly report and attended meetings.
- Ryan: Wrote weekly report and attended meetings.
- Tom: Updated online media, attended meetings.
- Dustin: Attended meetings, kept group on task.
- Anh: Attended meetings, kept group on task.
- Antjuan: Attended first meeting, pitched ideas.
- Each member also took notes during the conference call and decided on what to research.

Total Contributions for this Project

- Luke: 2hrs

- Isaac: 2hrs
- Ryan: 2hrs
- Tom: 2hrs
- Dustin: 2hrs
- Anh: 2hrs
- Antjuan: 1hrs