

EE 492 Biweekly Report 9

2/22/21 – 2/29/21

Group Number: SD May 21-43

Project Title: Emergency! Need backup!

Client/Advisor: Collins Aerospace / Andrew Bolstad

Team Members / Role:

James Curtis / Meeting Scribe

Caroline Easley / Meeting Facilitator

Marcelo Abrantes / Engineer (Power Systems)

Michael Kuehn / Communications Director

Benjamin Welte / Project Documentation

Abbey Wilder / Test Engineer

Stepan Zelenin / Engineer (Communication Systems)

Period Summary:

During the past weeklong report period, the design team was severely hampered by the unavailability of both a PCB to begin testing with and lab space to test the local oscillator at high frequencies. Most of the team's work related to research and retesting parts to double check that they worked as expected. The team was also able to create a preliminary program to communicate with the Arduino via SNMP, albeit SNMPv1. The program will eventually need to be updated to use the SNMPv3 protocol specified by the client. The team also discovered and corrected a flaw in the original PCB design that had been sent to ETG for fabrication. In summary, the team finalized the prototype PCB design and is awaiting its arrival as well as lab space to test it.

Past Period Accomplishments:

- Researched PCB design strategies – Marcelo, Michael, Stepan
- Reviewed PCB design – James, Caroline
- Parts Re-Testing – Marcelo, Caroline
- Corrected Flaw in PCB Ground Plane – Michael
- Studied Local Oscillator Datasheet – Ben
- Read Example Programs to Calibrate Local Oscillator - Ben
- Created Simple Circuit & Program to Implement SNMP get() command - Abbey

Pending Issues:

- Secure Access to High-Frequency Lab Equipment – Michael
- Test & Correct Code to Program LO (when lab equipment is available) – Ben
- Modify SNMP get() program to use SNMPv3 – Abbey
- Test PCB when it arrives – Michael, Caroline, James, Stepan, Marcelo
- Solder Leads onto Local Oscillator Packaging – Ben, Marcelo, Michael

Individual Contributions:

Name	Individual Contributions	Hours this week	Hours cumulative
James R.	<ul style="list-style-type: none">• Reviewed PCB design	6	30
Caroline E.	<ul style="list-style-type: none">• Retested PCB components• Reviewed PCB design	6	31
Marcelo A.	<ul style="list-style-type: none">• Researched PCB design• Retested PCB components	6	37
Michael K.	<ul style="list-style-type: none">• Researched PCB best practices for RF projects	6	30

	<ul style="list-style-type: none"> Fixed issue w/ground plane in PCB layout 		
Ben W.	<ul style="list-style-type: none"> Studied local oscillator datasheet Researched example programs for communicating with the local oscillator 	6	31
Abbey W.	<ul style="list-style-type: none"> Created program & circuit to implement SNMP get() function 	6	30
Stepan Z.	<ul style="list-style-type: none"> Researched best practices for PCB design 	6	31

Plans for the Upcoming Period:

Once the PCB is fabricated and delivered and the team gains access to high-frequency lab equipment, the team plans to begin testing the development PCB and to solder leads onto the local oscillator package so that the program written to set its frequency can be tested. The team will also work to modify the current SNMP code in order to use SNMPv3 instead of SNMPv1.

Advisor Meeting Summary:

Dr. Bolstad cancelled his meeting with the design team because of a scheduling conflict.