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| 1.12 | Weekly Status Report for Software Defined Radio | |
|  | October 31, 2018 | Submitted by: James Bell |
|  | Faculty Advisor: Dr. Stapleton | Team Members:  James Bell [PM]  Samuel Hussey  Zachary Schneiderman |
|  | Sponsor: Texas State University |

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| Yellow | Current Project Status |
| We built the amplifier we designed using parts available on campus from the parts carts in RFM 5216 and compared the results to the simulation of the same design. The simulation and the actual build did not match at all and the gain dropped dramatically as the frequency was increased. We are researching the possible causes and new designs for the amplifier to eliminate this problem. | |

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| Activities/Accomplishments this week | |
| Team Member | Description |
| James Bell | I have ordered parts and am updating paperwork. |
| Samuel Hussey | Continued testing on RF amp and updated diagrams. |
| Zachary Schneiderman | Didn’t spend much time on this project this week, worked on other things |

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| Problems Encountered | |
| Severity | Description |
| High | Pre-designed amplifiers do not have the frequency response we desire. The 80m and 40m bandpass filters do not have the roll-off characteristics we desire, so a redesign for all those components is necessary. |
| Med | . |
| Low | . |

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| Activities planned for next week | |
| Team Member | Description |
| James Bell | Updating the functional schematic to fix errors pointed out in the functional design review, and studying digital signal processing. |
| Samuel Hussey | Finish assembling amplifier and filters, continue testing |
| Zachary Schneiderman | Help assemble and test amplifiers and filters |

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| Upcoming Course Deliverables (next 2 to 3 weeks) | | |
| Deliverable | Due Date | Status |
| Labor cost schedule | 11/18/18 | In progress |
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| Sponsor and Faculty Advisor Meetings Held/Planned | | |
| Who | Date | Topic(s) |
| Dr. Aslan | Wednesdays, 8:20am | Weekly Meeting and discussion on project. |
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| 1.12 Software Defined Radio Open Action Items | | | |  |  |
| 10/31/2018 | Last Update |  |  |  |  |
| **Date** | **Description** | **DRI** | **Due By** | **#D** | **Notes / Comments** |
| 10/24/2018 | Updating simulations of analog components with most recent information from research | Samual Hussey | 11/1/2018 | 1 | Working with Zackary to update simulations |
| 10/24/2018 | Labor Cost Schedule | James Bell | 11/18/2018 | 18 | This is a class deliverable |
| 10/10/2018 | Understand the fundamentals of digital signal processing within the bounds of our design and project. | James Bell | 11/22/2018 | 22 | My goal is to be able to completely understand the data flow and processing for the design. This will take longer then first thought |
| 10/3/2018 | Ordering Parts | James Bell | 10/28/2018 | - | Completed - Fill out and submit paperwork for ordering parts. |
| 10/10/2018 | Working on RF Amplifier and Bandpass filter design as our simulations and test for the amplifier design did not meet our needs. | Zachary Schneiderman | 10/22/2018 | - | Review/ redesign our bandpass filters and amplifier. |

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| 1.12 Software Defined Radio Milestone Schedule | | | | | |
| 10/31/2018 | Last Update |  |  |  |  |
| 37 | calendar days until Senior Design Day |  |  |  |  |
| **DRI** | **Task** | **Dur** | **Start** | **End** | **Status** |
| Samuel Hussey | Statement Of Work (Executive Summary) | 24 | 8/31/2018 | 9/24/2018 | Finished |
| Zachary Schneiderman | Statement Of Work (Business Need) | 24 | 8/31/2018 | 9/24/2018 | Finished |
| James Bell | Statement Of Work (Product Scope Description) | 24 | 8/31/2018 | 9/24/2018 | Finished |
| Zachary Schneiderman | Statement Of Work (Project Scope Description) | 24 | 8/31/2018 | 9/24/2018 | Finished |
| Samuel Hussey | Statement Of Work (Sponsor Support Elements) | 24 | 8/31/2018 | 9/24/2018 | Finished |
| James Bell | Statement Of Work (Approvals Signature) | 24 | 8/31/2018 | 9/24/2018 | Finished |
| James Bell | Watch and take notes on Videos of SDR | 14 | 8/31/2018 | 9/14/2018 | Finished |
| Zachary Schneiderman | Watch and take notes on Videos of SDR | 14 | 8/31/2018 | 9/14/2018 | Finished |
| Samuel Hussey | Watch and take notes on Videos of SDR | 14 | 8/31/2018 | 9/14/2018 | Finished |
| Zachary Schneiderman | List of components in Prototype priced and deliver estimates | 40 | 9/12/2018 | 10/22/2018 | Finished |
| James Bell | Data/Signal Flow chart | 40 | 9/12/2018 | 10/22/2018 | Overdue |
| Samuel Hussey | Schematics for Prototype in multi-sim or other such software | 40 | 9/12/2018 | 10/22/2018 | Overdue |
| James Bell | Organizing, and commenting pre-existing code for Prototype | 33 | 9/12/2018 | 10/15/2018 | Finished |
| James Bell | Functional Spec section 1.1 (Summary) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| James Bell | Functional Spec section 1.2 (Sponsor Requirements) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| James Bell | Functional Spec section 1.3 (Existing System) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| Zachary Schneiderman | Functional Spec section 1.4 (Terminology) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| Zachary Schneiderman | Functional Spec section 2.1 (User Attributes and Use Cases) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| Samuel Hussey | Functional Spec section 2.2 (Administration Functions) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| Samuel Hussey | Functional Spec section 2.3 (Error Handling) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| James Bell | Functional Spec section 2.4 (Safety and Security) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| Zachary Schneiderman | Functional Spec section 2.5 (Help and User Documentation) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| Zachary Schneiderman | Functional Spec section 2.6.1 (User) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| James Bell | Functional Spec section 2.6.2 (Software) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| Samuel Hussey | Functional Spec section 2.6.3 (Hardware) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| Samuel Hussey | Functional Spec section 2.6.4 (Mechanical) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| Zachary Schneiderman | Functional Spec section 2.7 (Boundary Conditions and Constraints) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| James Bell (Team) | Functional Spec section 2.8 (Performance) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| James Bell | Functional Spec section 2.9 (Software Platforms) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| James Bell | Functional Spec section 2.10 (Service, Support, & Maintenance) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| James Bell | Functional Spec section 2.11 (Expandability or Customization) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| Samuel Hussey | Functional Spec section 3 (Project Alignment Matrix) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| James Bell (Team) | Functional Spec section 4 (References) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| James Bell | Functional Spec section 5 (Approvals) | 14 | 10/1/2018 | 10/15/2018 | Finished |
| Samuel Hussey | RF Amplifier Simulation v0.1 | 5 | 10/10/2018 | 10/15/2018 | Finished |
| James Bell | IDR Power Point | 12 | 10/10/2018 | 10/22/2018 | Finished |
| Zachary Schneiderman | RF Amplifier Build/ research, (redesign?) |  | 10/10/2018 | 10/15/2018 | Finished |
| Samuel Hussey | Speaker Amplifier | 5 | 10/10/2018 | 10/15/2018 | Finished |
| Samuel Hussey | Bandpass Filter Simulation | 5 | 10/10/2018 | 10/15/2018 | Finished |
| James Bell | Labor Cost Schedule | 35 | 10/15/2018 | 11/19/2018 | In progress |
| James Bell | Prep and do initial design review | 14 | 10/15/2018 | 10/29/2018 | Finished |
| James Bell | Order Parts | 4 | 10/24/2018 | 10/28/2018 | Finished |
| Samuel Hussey | All Simulations Completed for analog components we are constructing | 8 | 10/24/2018 | 11/1/2018 | In progress |
| Zachary Schneiderman | Bandpass Filter and Radio Frequency Amplifier built | 8 | 10/24/2018 | 11/1/2018 | In progress |
| James Bell | Poster Draft | 21 | 11/5/2018 | 11/26/2018 | Not Started |
|  | Test/Benchmark Circuits | 14 | 11/5/2018 | 11/19/2018 | Not Started |
|  | Develop Passthrough Tests | 14 | 11/5/2018 | 11/19/2018 | Not Started |
|  | Create Quadrature Converter | 21 | 11/5/2018 | 11/26/2018 | Not Started |
| James Bell | Test Plan | 11 | 11/19/2018 | 11/30/2018 | Not Started |
|  | Configure LCD/Tuner Knob | 13 | 11/19/2018 | 12/2/2018 | Not Started |
|  | Implement RF Receive Code | 7 | 11/19/2018 | 11/26/2018 | Not Started |
|  | Thanksgiving Break | 4 | 11/21/2018 | 11/25/2018 | Not Started |
|  | Receive/Tune tests | 9 | 11/26/2018 | 12/5/2018 | Not Started |
|  | Receive/Tune tests | 9 | 11/26/2018 | 12/5/2018 | Not Started |
|  | Print Poster, Finalize Display | 16 | 11/12/2018 | 11/28/2018 | Not Started |
|  | Transmitting/Tune tests | 9 | 11/26/2018 | 12/5/2018 | Not Started |
|  | Senior Design Day | 0 | 12/7/2018 | 12/7/2018 | Not Started |
|  | Final Preparations for Senior design day | 2 | 12/5/2018 | 12/7/2018 | Not Started |
|  | Add licensing selection to radio | 28 | 1/22/2019 | 2/19/2019 | Not Started |
|  | Raspberry Pi implementation | 41 | 1/22/2019 | 3/4/2019 | Not Started |
|  | Custom PCB | 41 | 1/22/2019 | 3/4/2019 | Not Started |
|  | Higher Power Amplifier | 21 | 2/19/2019 | 3/12/2019 | Not Started |
|  | Alternate Power Sources | 21 | 2/19/2019 | 3/12/2019 | Not Started |
|  | Custom Cases | 28 | 3/12/2019 | 4/9/2019 | Not Started |
|  | Head phone output jack | 27 | 4/9/2019 | 5/6/2019 | Not Started |
|  | Finalize Poster | 0 |  |  | Not Started |
|  | Print Poster, Finalize Display | 0 |  |  | Not Started |
|  | Senior Design Day |  |  |  | Not Started |