

EE/CprE/SE 492 BI-WEEKLY REPORT 1 11/19 – 12/3

Group number: sdddec18-20

Project title: Delta Sigma ADC

Client &/Advisor: Randall Geiger and Degang Chen

Team Members/Role:

Tyler Archer — Test Lead Engineer

Caleb Davidson — Communications and Scribe Manager

Caroline Alva — Chief Engineer

Mahmoud Gshash — Meeting Facilitator

Joshua Rolles — Report Manager

Weekly Summary

Design of the 65nm modulator and modified modulator is fully completed with pad frame and rule checking. Information from the entire design has been aggregated and will be presented on, including poster, design document, and presentation materials. PCB design for testing the final design has been completed.

Past week accomplishments

- **Tyler Archer:** Fixed all problems involved in getting Calibre DRC and LVS working. Created modified version of schematic with test points added. Created top-level schematic with original and modified modulators and controllable clock gating to select which modulator is active. Completed layout of all modulator blocks and modulators. Obtained pad frame and modified it to work for our supply voltages. Completed top-level layout consisting of modulators connected to pad frame. Ran top-level DRC, LVS, and antenna rule checking showing clean results. Submitted project for fabrication. Ran a simulation sweep and obtained modulator simulation test results over a range of input voltages. Summarized this data in plots and added it and information about the 65nm design to the design document.
- **Mahmoud Gshash:** Started layout of the critical components due to change in the submission of the design. Fixed all the pending issues and confirmed schematics functionality.
- **Caroline Alva:** Created the poster, Finished the final version of the test-plan, Finalized the final Design Document
- **Josh Rolles:** Helped proof read the poster and test plan. A lot of the pending work was assigned to other groupmates, so I attempted to help where I could.
- **Caleb Davidson:** Completed a revision 2 for our PCB design with the modulator and modified modulator pin layout. Created diagrams and information collection for final report, poster, and presentation. Double checked gerber files created for the PCB design.

Pending issues

- Tyler Archer: The final report needs to be completed with a user guide included.
- Mahmoud Gshash: The final report needs to be completed with user instruction guide added.
- Caroline Alva: No issues pending
- Josh Rolles: None this week
- Caleb Davidson: Nothing for this week

Individual contributions

| Name | Individual Contributions | Hour Worked | Cumulative Hours Worked |
|--------------|--|-------------|-------------------------|
| Tyler Archer | <ul style="list-style-type: none"> Fixed all problems involved in getting Calibre DRC and LVS working. Created modified version of schematic with test points added. Created top-level schematic with original and modified modulators and controllable clock gating to select which modulator is active. Completed layout of all modulator blocks and modulators. Obtained pad frame and modified it to work for our supply voltages. Completed top-level layout consisting of modulators connected to pad frame. Ran top-level DRC, LVS, and antenna rule | 65 | 120 |

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|----------------|--|----|----|
| | <p>checking showing clean results. Submitted project for fabrication. Ran a simulation sweep and obtained modulator simulation test results over a range of input voltages. Summarized this data in plots and added it and information about the 65nm design to the design document.</p> | | |
| Mahmoud Gshash | <ul style="list-style-type: none"> Started layout of the critical components due to change in the submission of the design. Fixed all the pending issues and confirmed schematics functionality. | 20 | 60 |
| Caroline Alva | <ul style="list-style-type: none"> Created the poster Finished the final version of the test-plan and finalized it's format Finalized the final Design Document | 10 | 37 |
| Josh Rolles | <ul style="list-style-type: none"> Helped proof read the poster | 3 | 32 |

| | | | |
|----------------|---|----|----|
| | and test plan. A lot of the pending work was assigned to other groupmates, so I attempted to help where I could. | | |
| Caleb Davidson | <ul style="list-style-type: none"> Completed a revision 2 for our PCB design with the modulator and modified modulator pin layout. Created diagrams and information collection for final report, poster, and presentation. Double checked gerber files created for the PCB design. | 10 | 48 |

Plans for the upcoming week

- Tyler Archer: We plan to complete the final report and presentation and present our project results
- Mahmoud Gshash: Finish layout for the march deadline and possibly improve design.
- Caroline Alva: Prepare for and create the Final Presentation! Woo hoo!
- Josh Rolles: Finalize IRP presentation and practice with groupmates.
- Caleb Davidson: Complete presentation and final PCB details.