Executive Summary – James Thomas

Contributions

Technical
- Created schematics for FMC connector
- Created schematics for external connections and communications
- Worked on PCB routing
- Researched LVDS and UART
- Implemented LVDS UARTs

Team
- Researched HPC FMC connector
- Found several components needed for PCB
- Added connections to FMC for other schematics to use
- Research on PCB manufacturing
- PCB manufacturing quick quotes

Final Report
- Added documentation to PCB schematic sheets
- Added new documentation sheets to outputted Altium documentation
- Created the Index and compiled documentation

Ideas for Future Work

- Finish PCB and test it
- Improve PCB design
  - Use better routing techniques for differential pairs
  - Change components for enhanced performance
- More research into PolarFire capabilities

Time Table

Week	Hours	Major Tasks
Weeks 1, 2, 3	20	Completed team assignments. Did research on the new technologies and languages that will be used for this project. Helped create project schedule.
Week 4	13	Did research on HPC FMC connector and found datasheet. Worked on the schematic.
Week 5	9	Worked on the schematic. Did research into UARTs and VHDL. Found datasheets for Polarfire and found the FMC component for the schematic.

Week 6	14	Worked on the schematic. Found some needed components.
Week 7	10	Worked on the schematic, mostly getting rid of errors. Starting BAUD generator for Artix-7 since libero isn't working yet.
Week 8	11	Finished Schematics and started working on the PCB layout. Found remaining 3d models for the components we're using.
Week 9	13	Worked on routing for the layout. Switched the FMC connector to the male connector.
Week 10	13	Worked on the PCB layout routing.
Week 11	10	Finalized the PCB layout and got it ready for ordering. Did research and got quotes on PCB fabrication.
Week 12	14	Implemented an LVDS UART and worked on documentation for the PCB.
Week 13	30	Worked on PCB documentation and project index.
Total hours:	**161**	