**Date: 4/16/2014-4/23/2014**

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| **Group Number and Name** | **#14 Low Cost RF power meter** |
| **Client/Advisor** | **Dan Stieler/ Prof Neihart** |
| **Attendees/Role** | **Silu Feng/leader Xiaoshuo Li,Yusi Xie/Key idea holder Yijia Huang/webmaster Boyang Hu,Cong Han/Communicater** |

# Past week accomplishments

What was done, who did it, and when it was done

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| * The diode and coupler group meet together and share the data.
* The diode group put a 1/sqrt(10) voltage divider before scale amp and put another 1/sqrt(10) voltage divider after the scale amp to make sure the total gain is (1/sqrt(10)\*AV1\*1/sqrt(10)), AV1 is the gain of the scale amp. Then recalculate the feedback resistance, input voltage, output voltage and gain.
* The diode group combine the diode detector, low pass filter and scale amp in the ADS and test the system with different power input.
* The coupler group update the block diagram.
* The coupler group search for the external attenuator and make the arrangement of the box.
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# Plan for coming week

What to do, who, and when should it be done

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| * The diode group and coupler group write the PPT to prepare for the presentation.
* Both group will try to get the access to senior design room for keeping parts secure and safe.
* Both group will work together about what to present during presentation, and control the time of each person’s content.
* Diode group will put a bias voltage source in the first 1/sqrt(10) voltage divider. To eliminate the effect of high gain when the input power level is too small.
* The block diagram will redraw.
* The whole team will do three examples to test the error of the system, it is 7W,125W,290W. The error of the whole system should below 5%.
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# Pending Issues

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| * We need to prepare for the presentation.
* We need to do three examples to test the system.
* We need to get access to the senior design room.
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# Individual Contributions

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| * Yijia Huang revised transmission line and directional coupler part in project plan and document design (2 hours).

Yijia Huang and Silu Feng contacted with Lee about building directional coupler ( holes cutting, how to remove jacket and shield on transmission line, get a PC board with two side copper) (2 hours).Yijia Huang and Silu Feng talked about how to build directional coupler step by step and watched couples of videos about connect connectors to our transmission line (2 hours).* Silu Feng write document design and project plan, type all the equation and explain several parts (2 hours).

Search how to build the coupler. Measured the length of transmission line and PC board. Drawing the picture about each part how to build (2 hours).Meeting with coupler group member and discussed how to build the coupler (1 hour).* Xiaoshuo Li combine the diode detector, low pass filter and scale amp in the ADS and test the simulation (3 hours).

Xiaoshuo Li write the design document and project plan (3 hours).Work with Boyang Hu to run the simulation after adding the scale amp (2 hours).* Boyang Hu put a 1/sqrt(10) voltage divider before scale amp and another 1/sqrt(10) voltage divider after scale amp. Recalculate the feedback resistance, gain ,input and output voltage, the error tolerance of the gain and the real resistor value choose (3 hours).

Boyang helped Xiaoshuo Li to combine scale amp with low pass filter and diode detector in the ADS and run the simulation (2 hours).* Cong Han did simulation of low pass filter with different type of op amp. LMC6492 and LMC7101 (2 hours).

They are all have a lot of error. Asked professor with a new schematic with proper value, got the expected result with correct graph (2 hours).* Yusi Xie update the block diagram, changed low pass filter, voltage divider, scaling amplifier information (2.5 hours).

Design the arrangement of coupler box, talked with Lee about cutting transmission line (1 hour).Research datasheet for external attenuator for N type connector (0.5 hour). |
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Individual hourly Contributions

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| **NAME** | **Hours this week** | **HOURS****Cumulative** |
| Silu Feng | 5 | 61 |
| Xiaoshuo Li | 8 | 80 |
| Yijia Huang | 6 | 73 |
| Boyang Hu | 5 | 62 |
| Cong Han | 4 | 66 |
| Yusi Xie | 4 | 61.5 |

# Comments and extended discussions:

We did a great work in the past week. The whole system design will finish.

We will do a presentation in the next Tuesday.