

Dec12-04 Ultrasound Brain Imaging System

Weekly Report -1 (Jan 16 – Jan 23)

Group Members: Justin Batcheler, Jon Driggs, Francis Ferrer, Allen Kellar, Richard Page, Amairani Tapia

Faculty Advisor and Client: Dr Timothy Bigelow

Accomplishments of the last week

- Last week we scheduled our first meeting with Dr. Bigelow. At the meeting we were briefed on the project and received many documents that we will use in our research.
- The goal of the project is to design an ultrasound system consisting of 128 independently accessible channels. The phase of each channel must be controllable to a degree of roughly 10ns. Data will be sent over a serial connection to a computer interface.

During our group meeting we assigned the positions of team leaders, communication leaders, and webmaster. They are listed below:

- Team Leaders
 - Jon Driggs
 - Francis Ferrer
- Communication Leaders
 - Allen Kellar
 - Amairani Tapia
- Webmaster
 - Justin Batcheler
 - Richard Page

Plan for coming week

- Look into impedance matching the ultrasound transducer. Apparently the transducer is highly capacitive, so the signal will not propagate well if the network connected to the transducer does not offset the capacitance.
- Dr. Bigelow suggested that we do a patent search on ultrasound TX and RX circuits. Once we have an idea of the techniques used to make an ultrasound circuit, we will attempt to design one channel with TX and RX in Cadence.
- Set up a weekly meeting with Dr. Bigelow to discuss progress.
- Get group website up.

Pending issues

- Project Plan due on February 15th.

Individual contributions – identify specific tasks accomplished

- All group members have started researching documents from Dr. Bigelow and other sources.
- Justin has set up the group email.