

MIT Lincoln Laboratory: Remotely Operated Intrusion Alarm

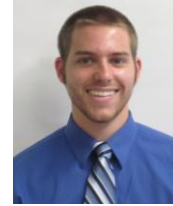
Our design team is working with MIT Lincoln Laboratory to create a Remotely Operated Intrusion Alarm. This project has been developed in a smaller version, which was previously designed by MIT Lincoln Laboratory as a classroom project. However, that system has many shortcomings such as slow processing speed, low accuracy and poor portability.

The goal of this project is to prototype a stand-alone radar system that overcomes these faults. The final system detects an intruder and sends a message with information pertaining to the intrusion to the user via text or email.

In the beginning of the operational flow the 2.4GHz radar scans the room and sends an audio signal through a filter and into the TI PCM1808 ADC. The ADC then converts the data and ports it to the TI Stellaris LM3S9D92. The Stellaris performs the necessary calculations to detect an intruder and measure its speed and distance. This data is sent to a PC via Ethernet connection, which subsequently attaches a timestamp. The PC can then send alert messages to via text message or email to relay the information of the intrusion.

This design is small, power efficient, and will allow maximum sampling rate in order to obtain real-time data, as well as system portability.

<http://www.egr.msu.edu/classes/ece480/capstone/fall11/group06/index.html>



C. Leonard
Electrical Eng



R. Hunt
Electrical Eng



C. Oakley
Electrical Eng



P. Deacon
Electrical Eng



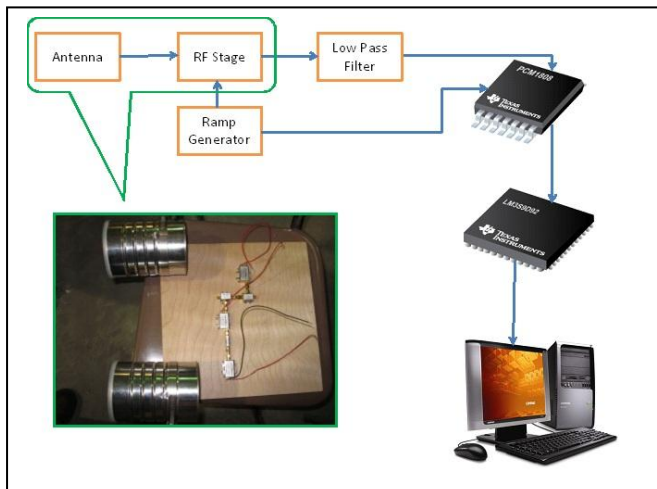
D. Koenigsnecht
Computer Eng



Dr. Perry



Dr. Rothwell



Project Sponsor
MIT Lincoln Laboratories

Sponsor Representative:
Dr. Bradley Perry

Faculty Facilitator
Dr. Edward Rothwell

Team Members and Non-Technical Roles

Chris Oakley
Manager

Darci Koenigsnecht
Webmaster

Ryan Hunt
Documentation Prep

Peter Deacon
Presentation Prep

Chris Leonard
Lab Coordinator