IPRO 310

A Vision for Blind Swimmers

IPRO It takes a team! INTERPROFESSIONAL PROJECTS PROGRAM

Designing and Building Prototypes for Assisting Blind and Visually Impaired Swimmers

Technology

OBJECTIVES

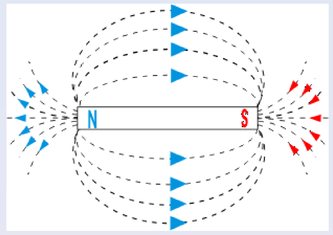
- Evaluate approaches in previous IPROs
- Research previous IPROs most recurring technologies to determine to most ideal solution
- Meet with subject matter experts for assistance
- Design and test a basic prototype for preliminary testing
- Evaluate performance of prototype and document findings

IDEAL PARAMETERS

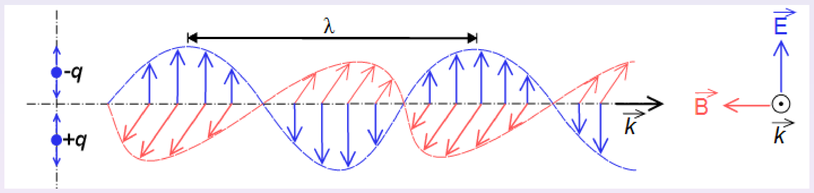
- Easy to generate and transmit from a small portable device
- Limited interference
- Easily received and interpreted by a receiver on the person
- Calculations involved in the localization of the signal not too complicated
- Cost effectiveness based on research done by the Communication Team

RESEARCH

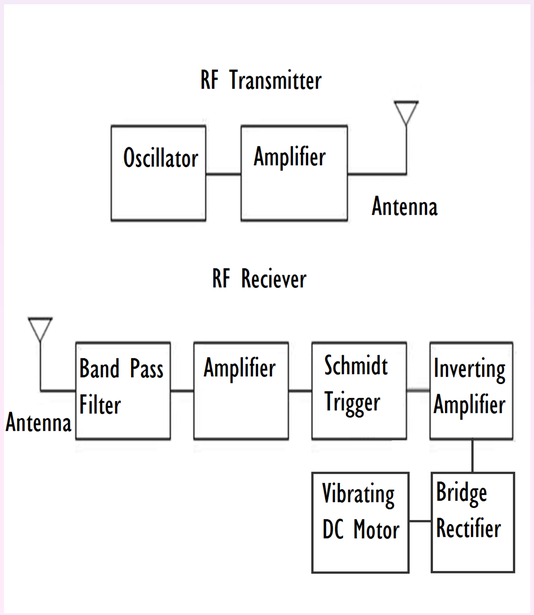
Determined that signal interference was too great to overcome due to size of pool

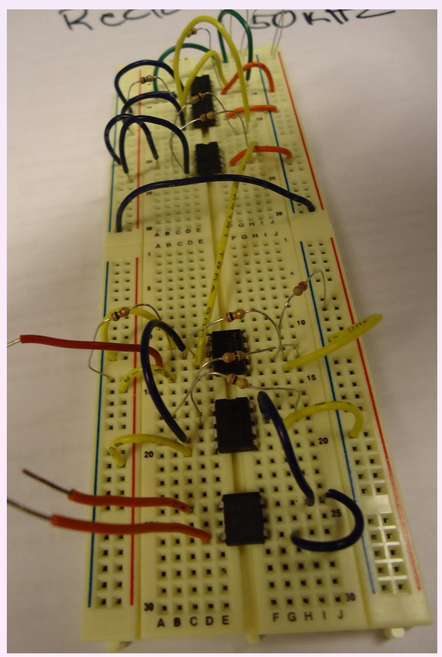


Required too much electrical current to be practical. Incompatible with pacemakers.



DEVICE





RESULTS

- Semi-functional transmitter and receiver were built
- Design needs work → bridge rectifier
- Incorporate magnetic switch
- Signal attenuation in pool water must be calculated

NEXT STEPS

- Require EE or ECE majors for technology team

ACKNOWLEDGEMENTS

Professor Lane
Professor Troyk
Professor Glodowski
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Image sources are Attached