

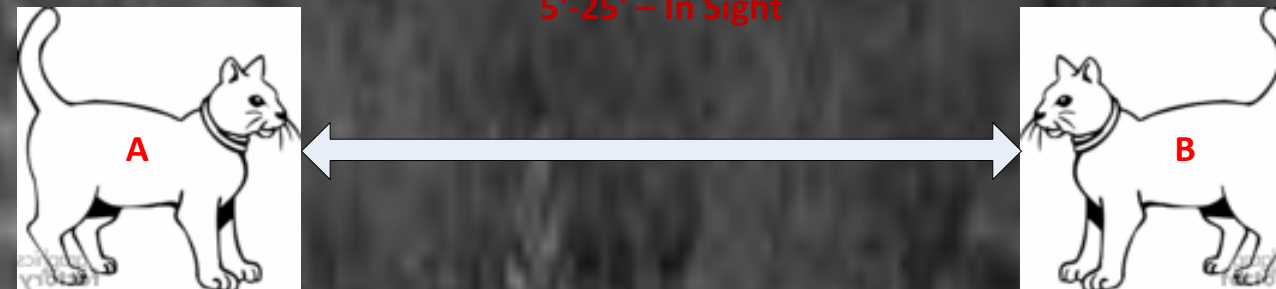
Top Cat

Team Members: Alexandra Peruzzini(EE), Duncan Topley (EE) and Obinna Ukachukwu (EE)

Team Guide: George Slack

Mission Statement

To design and test a concept of two short-range cat collars which will send a stimulus to irritate the cats when they are in range (5' to 25') of one another. RF technology is being used to track distance between the cats.



Customers:

- 1) Mr. David Perlman
- 2) Harris Corporation

Motivation

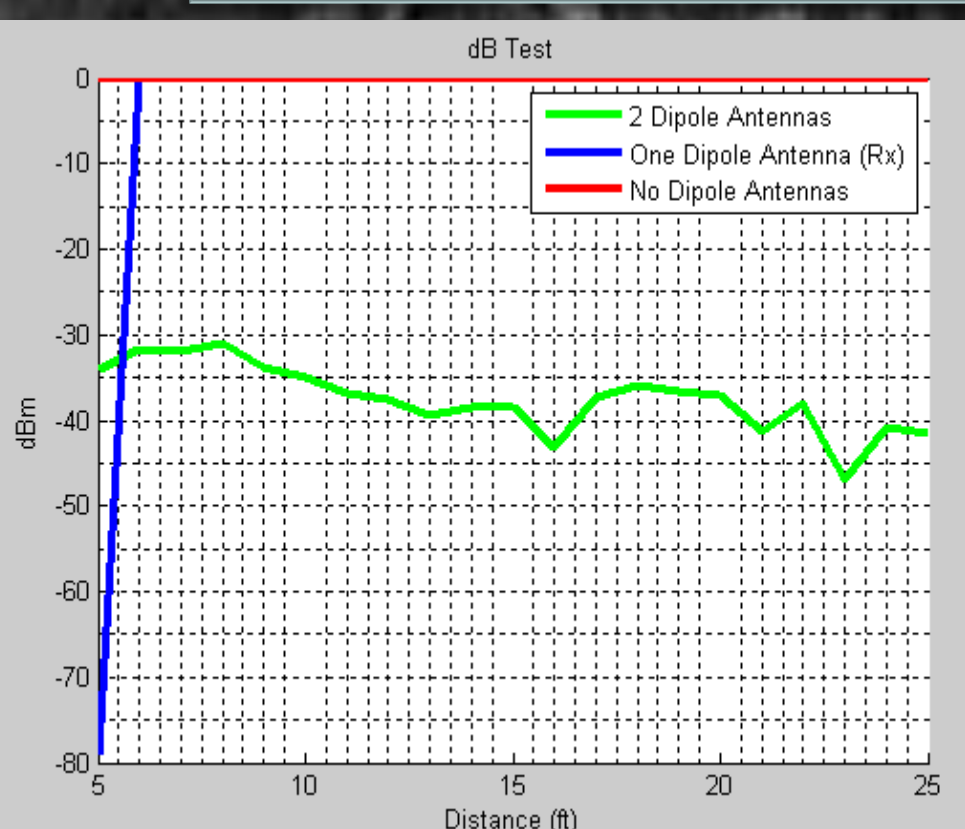
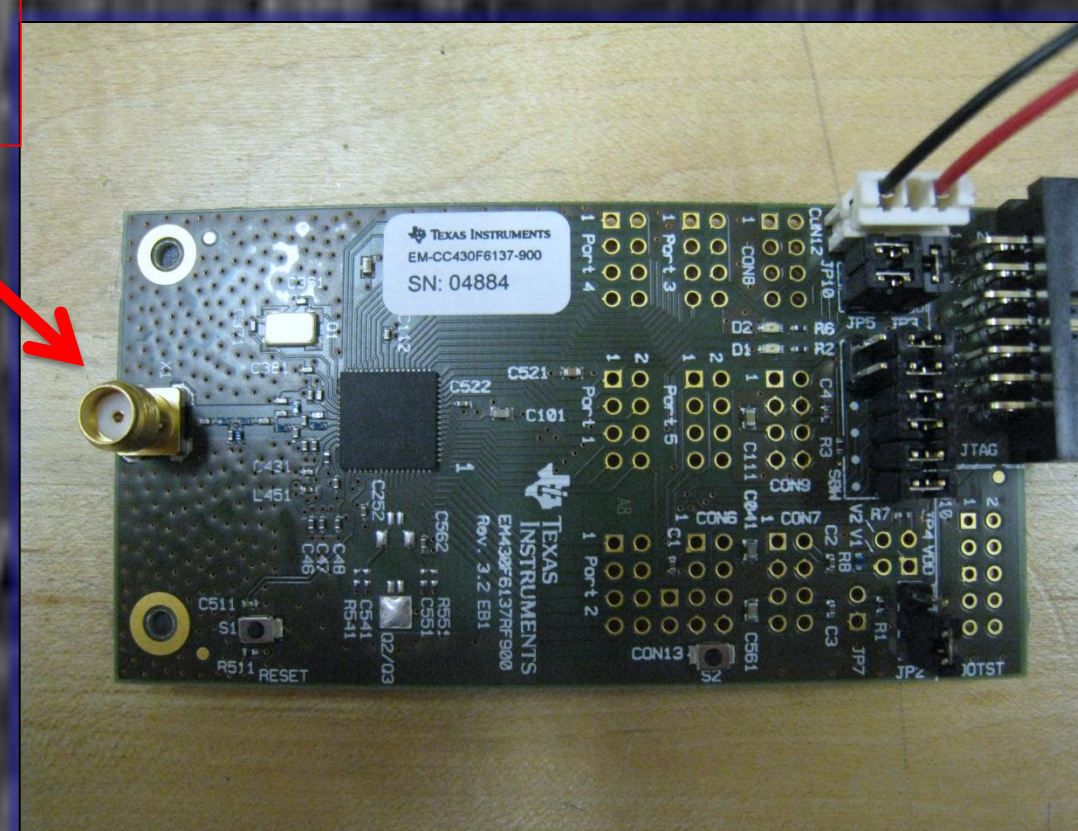
- Outdoor cats are more prone to fighting
- There has yet to be a device similar on the market

Background

There are many technologies that can precisely determine distance such as Sonar or GPS. However, size and weight of the collar adds many constraints to the design. RF technology is being tested to see if it is feasible to use as an approximate determination of distance. The tests are being done using Texas Instruments CC430 development kits.

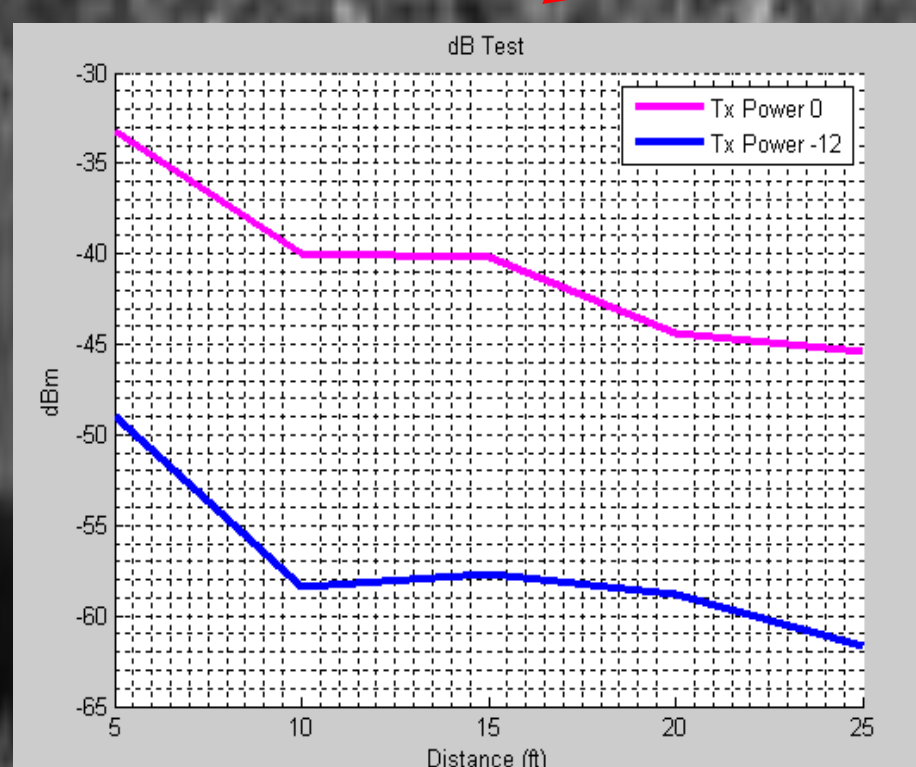
Antenna Connection

J-TAG Connection



Indoor Test

Outdoor Test

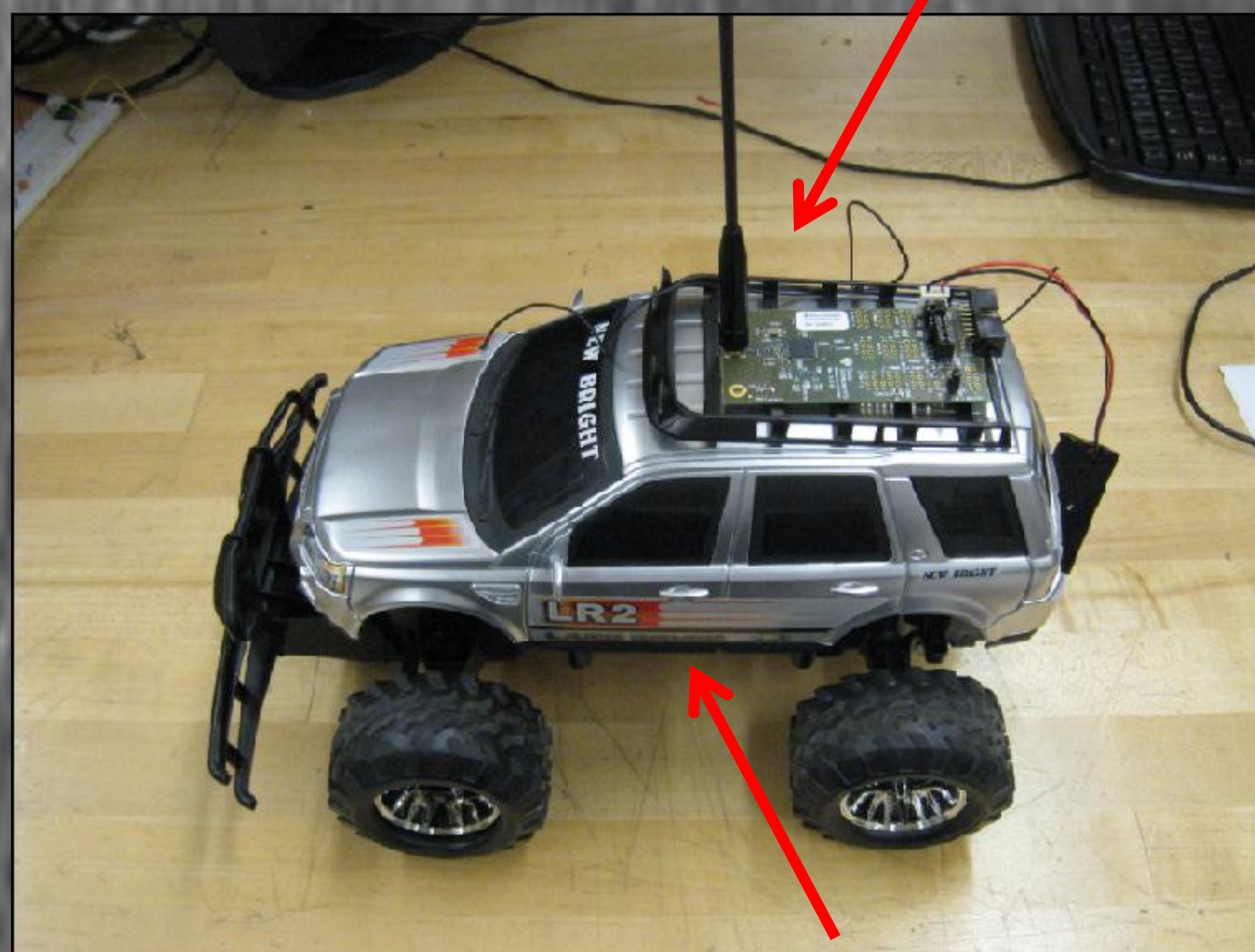


Key Objectives

- 1) Create an algorithm that increases the stimulus as the cats move closer and closer to one another
- 2) Create an algorithm that resets after a specified amount of time
- 3) Prove feasibility (through demo) of the use of RF to determine approximate distance



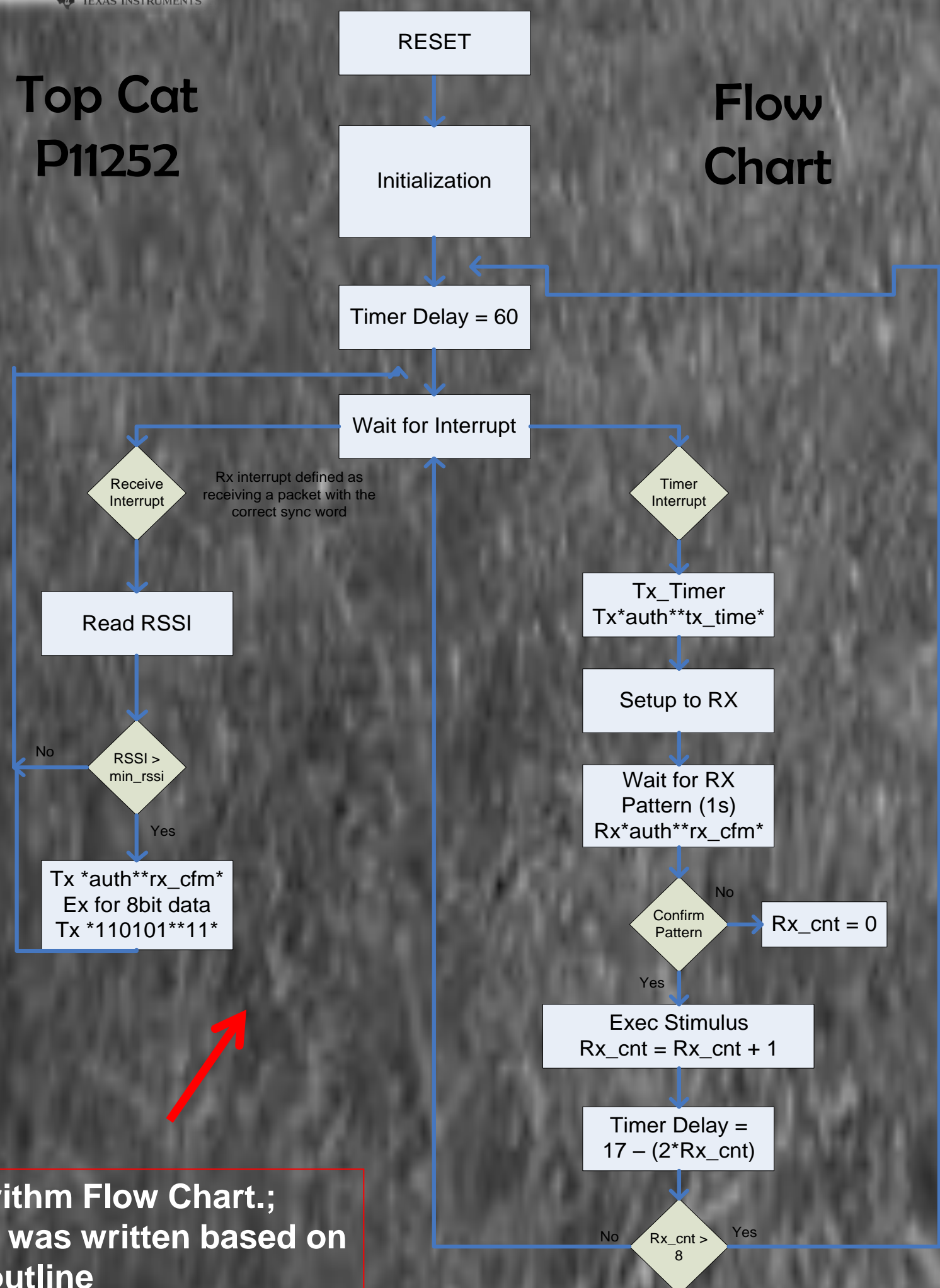
Development Kit



Speaker will Be located under The car

Top Cat P11252

Flow Chart



Algorithm Flow Chart.; Code was written based on this outline

Future Work

- 1) Build two short-range collars
- 2) Consider a more advanced PCB antenna design

FOR ADDITIONAL INFORMATION VISIT OUR TEAM WEBSITE ONLINE AT: <https://edge.rit.edu/content/P11252/public/Home>

