CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY

Name(s)
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Project Number
S0998

Project Title
Speeding Up the Superhighway

Abstract

Objectives/Goals
The objective of the experiment is to boost ones household internet signal without spending a lot of money and to eliminate off property signal. I believe that by placing a parabolic dish around the antenna of my wireless router, I will be able to eliminate off property signal and boost my internet speed by 50%.

Methods/Materials
The materials which will be used are a wireless router with an antenna, an internet connection, a computer, a wireless receiver card, a parabolic dish, and a 3D printer. The tests will be conducted at four places. I will be measuring the straight path of the connection time at 0 feet, 50 feet, 100 feet, and 150 feet. Each distance will be tested on a) Ping time without the Dish; b) Ping time with the dish; c) Connection speed without the dish; d) Connection speed with the dish. This will add up to a total of 400 tests. I will be testing each category a total of twenty-five times each. Each test is to be conducted at 30 second intervals to ensure the router has refreshed.

Results
The results conclude that my hypothesis was correct in assuming that by placing a parabolic dish around an antenna of a router that the speed would be increased. After testing the #ping#, of the router before and after the placing of a parabolic dish on the antenna, at 0ft, 50ft, 100ft, and 150ft I noticed a significant decrease in the time it took to ping the router. The dish hadn't effectively improved the signal at [ZERO ft] but the further you went away from the router [50ft-100ft-150ft] the longer it took to complete a ping test. But after placing the dish on the antenna, the speed was significantly increased.

Conclusions/Discussion
My conclusion is that all routers send signal in areas where you might not need nor want it. By placing this parabolic dish around your antenna it can harness that unused internet and send in right back into your home (preventing others from logging into your router) and boost the connection speed by 50%.

Summary Statement
My project is primarily to increase internet speeds for the common people who can't afford to pay for a more expensive plan by engineering something that can be available to everyone.

Help Received
Velma Lomax helped with networking; Karen Reynosa helped with planning; Dennis from TDC provided his 3D printer and supplies; Mr. Tolkmit helped with the math; Jake Stelman helped with SolidWorks design;