CALIFORNIA SCIENCE & ENGINEERING FAIR
2018 PROJECT SUMMARY

Name(s)
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Project Number
J1410

Project Title
What Materials Block Wi-Fi Signal?

Abstract

Objectives/Goals
The objective of this experiment is to determine which object or building materials would block the wireless signal the most.

Methods/Materials
Wireless router, smart phone with AR Signal Master app, various building and household materials and a human subject. Measured the WiFi signal three times using various materials blocking the router and comparing it to the WiFi signal without any material blocking the router.

Results
Various materials were used to block the wireless router and the strength of the WiFi signal was recorded. The data from each material was averaged based on three trials. This data was subtracted from the average strength of the wireless signal without any material blockage (base) determining its attenuation (gradual loss of signal). The data proved that the human body blocked the WiFi signal the most.

Conclusions/Discussion
This experiment revealed that the human body weakened the WiFi signal the most. I continued doing more research for this experiment and found out that the human body is made up of 45 to 75 percent water. Water is a great absorber of WiFi frequency therefore the reduction of signal strength.

Summary Statement
Most people suffer from poor WiFi signal so I decided to do a study on what materials can possibly block the WiFi signal.

Help Received
None. I conducted this experiment by myself at home.