CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
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Project Number
S0717

Project Title
Listening to Lightning

Abstract

Objectives/Goals
The objective of my project is to find out how well a homemade whistler receiver does compared to one made by a professional.

Methods/Materials
A receiver was built using directions from a magazine article and used Radio Shack parts. The other professionaly made receiver was gotton from a personel at NASA. Sensitivity and durability were tested using several groups of tests, like the power line test for sensitivity, and were then analyzed using many different instruments including an oscilloscope and spectrometer.

Results
The receiver made by a professional came on top in all of the tests that were done for instance it proved more sensitive in the power line test. The homemade one had many more malfunctions and had a problem in its amplification part of its circuit which made it very hard to hear with the human ear.

Conclusions/Discussion
There is a part of the circuit that amplifies the sound coming out of the receiver which does not seem to work on my receiver. In the one made by a professional that part of the circuit is put into an integrated circuit which makes it more likely to work while in the homemade one it is made up of many different parts meaning that there are many places to go wrong. I have gone as far as to replacing all the parts of the circuit that could be causing the problem and still have not fixed it.

Summary Statement
I am comparing a homemade whistler radio receiver to one made by a professional.

Help Received