



**CALIFORNIA STATE SCIENCE FAIR  
2014 PROJECT SUMMARY**

<b>Name(s)</b> <b>Stephen Mann; Viking Mann</b>	<b>Project Number</b> <b>S0920</b>
<b>Project Title</b> <b>Parabolic Reflector</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> This project seeks to measure if a parabolic reflector increases the strength of WiFi, and if so, by how much?</p> <p><b>Methods/Materials</b> 11x5in Cardboard, Foil, 8x5 3/4 in cardboard, Wifi Router Computer with inSSIDer. To test our hypothesis, a parabolic reflector was crafted, and placed on the router. Then a laptop was set across from the router in an open area, and the WiFi strength measured by inSSIDer (a software capable of measuring the strength of WiFi in decibels). For the interpretation of data, the decibels were converted into a more readily understood unit of power: Watts</p> <p><b>Results</b> Average change in Watts 4.23E-009 1.05E-008 3.36E-009 1.58E-008 3.02E-009 1.36E-008 Change in dBm: 3.933 Change: 6.733 Change: 6.533</p> <p><b>Conclusions/Discussion</b> Our conclusion reflects that although we were correct in that parabolic reflectors increase the strength of WiFi, we found that the strength is actually increased with much more magnitude, about 150%-400%. The procedure went smoothly because the data was consistent, the readings were similar, and thus the results are conclusive. However, it would have been better to test the experiment in a more remote location.</p>	
<b>Summary Statement</b> Increasing signal strength by reflecting all transmissions in one direction.	
<b>Help Received</b> None	