Is Your Smartphone Leaking? A Four Year Project

Rimoldi Ibanez, Camila (School: Sebring High School)

Smartphones are one of the most important tools in our global society. However, smartphones emit high levels of Radio Frequency Radiation which has the potential to be harmful to human health. The goal for this continued investigation was to find a method to reduce radiation. To decrease the RF Radiation, three different methods were tested; a Gold Thread Sheet Metal, Gold Electroplating, and the both COMBINED. The hypothesis was that the COMBINED method would decrease the most Radiation. Each method was applied, separately and combined, to each smartphone and then the RF levels were measured using a Cornet Meter. To make the trials as identical as possible, while the phone was on call mode, it always had three bars of service. The average radiation was calculated for each testing to analyze and compare the effectiveness of each method. The COMBINED Method was successful in decreasing the high radiation levels in all trials. It decreased radiation by an overall average of 89%. This brought down radiation levels from Red Level (Warning) to a constant Yellow Level (Safe but Cautious). Specifically, it decreased an average 91% of the radiation in the Wi-Fi Antenna and 84% in the Cellular Antenna/ Connector. This process could become part of the normal smartphone assembly process. Although it cannot be denied that this process may entail some additional costs, it would definitely have health benefits, help society, and it could lead the way to a new trend to make all electronics radiation safe.

Awards Won: