Is Your Smart Phone Leaking?: Year Three

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Science and society go hand in hand. Now, more than ever, society is increasing the smartphone usage time by far. There are investigations that acknowledge all of the possible health effects, within them cancer, migraines, lack of focus, etc. These are due to the high levels of Radio Frequency (RF) Waves that smartphones emit. In one of the previous science fair projects done, the results conceded that the measured RF radiation exceeded the limit set by the US Federal Commission (this being 1.6 W/kg). Therefore, the problem that this project is trying to solve is to decrease this high RF radiation to a level to where it is safe to use smartphones. A smartphone has two main antennas that emit high levels of radiation: the cellular antenna and the Wi-Fi antenna. In this project these two antennas are separately wrapped, tested, and analyzed with three different types of threads. These threads are Semi-Transparent Cotton-Copper-Carbon-Silver Thread, Silver/Nylon Thread, and a Pure Gold Thread. After analyzing the results the hypothesis was proved correct. The hypothesis is, "If the smartphones' Cellular and Wi-Fi antennas are wrapped in different thread materials (Semi-Transparent Cotton-Copper-Carbon-Silver Thread, Silver/Nylon Thread, and Pure Gold Thread), then the Pure Gold Thread will decrease the most radiation". The Gold Thread decreased radiation in all the trials of the three phones tested, for both antennas.

Awards Won: