Abstract

The performance of two internal antennas namely Planar Inverted F Antenna (PIFA) and Inverted F Antenna (IFA) is evaluated in this paper. The effects of radio frequency on human exposure to these antennas are analyzed. Human phantom is designed with dielectric properties and the levels of absorption in terms of 1g SAR (Specific Absorption Rate) values are calculated. Results show that PIFA outperforms IFA in terms of SAR, efficiency, gain, backward radiation, return loss characteristics. All numerical modelling are performed using FEKO Suite 5.5 software which uses MOM for computation.

References

- Tang Chi Kit, "Electromagnetic Field Human Exposure of using Mobile Phone inside Metallic Elevator," December 2008
- Frank M. Caimi, Kerry L. Geer, "Antenna Design for improved Efficiency and Reduced SAR," April 2001
- Wong, "Planar Antennas for Wireless Communications);
- International Non-Ionizing Radiation Committee of the International Radiation Protection Association, Guidelines on limits on exposure to radio frequency electromagnetic Fields in the frequency range from 100 kHz to 300 GHz; Health Physics, Vol. 54, No. 1, 115-123, 1988.

**Index Terms**

Computer Science

Applied Sciences
Keywords
PIFA  IFA  SAR  Gain  Efficiency