

Analysis of a Planar Inverted-F Mobile Handset Antenna with Reduced Radiation Towards Human Head

C. Anandan¹

¹Cochin University of Science and Technology, Cochin, Kerala, India

Abstract

This paper deals with the simulation and analysis of SAR and temperature distribution induced by a Planar Inverted-F Antenna on human head model using COMSOL Multiphysics® software. The goal of this paper is to compare the SAR and temperature distributions of omni-directional PIFA with that of a PIFA with reduced radiation towards human head. The two antennas are designed to operate at 900 MHz and the distance between the head model and the antenna are also same.

Fig.1 shows the geometry of proposed antenna. The antenna is simulated on an FR4 substrate of thickness 1.6mm and relative permittivity 4.3 and has an overall dimension of 50×100×11.6 mm³. The radiation pattern is shown in Fig 2.

Figures used in the abstract

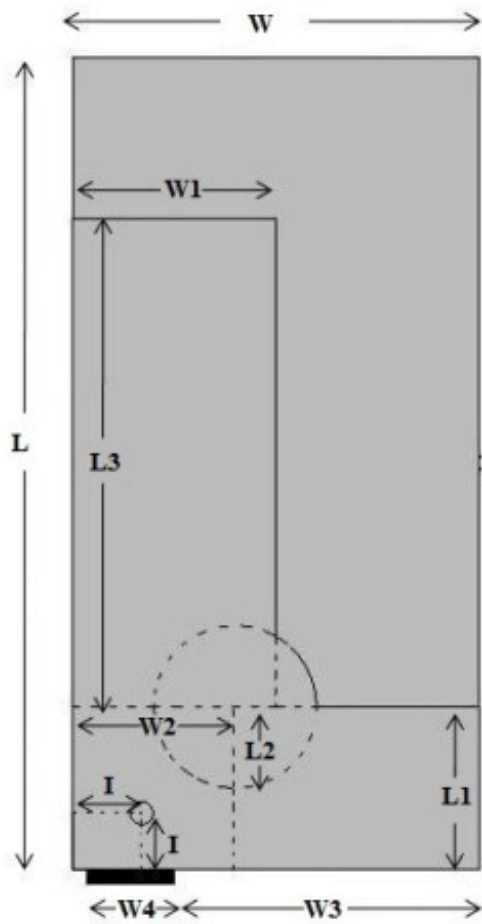


Figure 1: Geometry of the proposed antenna.

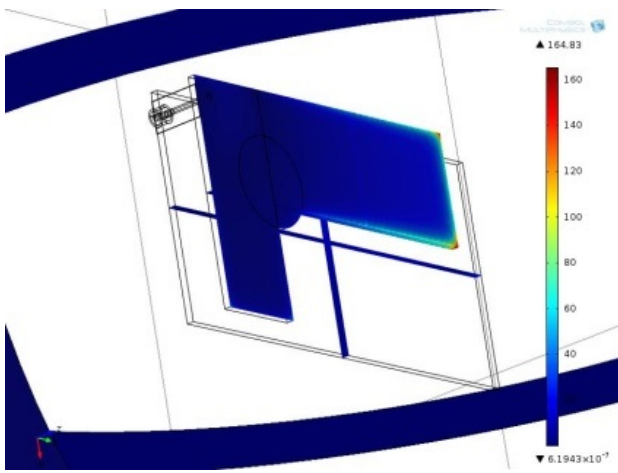


Figure 2: Electric field distribution.

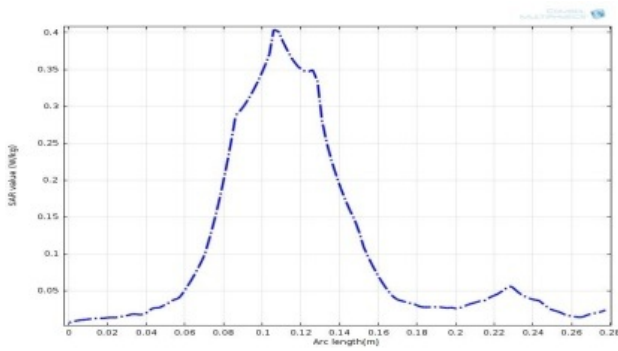


Figure 3: SAR of Proposed Antenna.