

Author(s): Pinho, P (Pinho, P.); Casaleiro, J (Casaleiro, J.)

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Abstract: The big proliferation of mobile communication systems has caused an increased concern about the interaction between the human body and the antennas of mobile handsets. In order to study the problem, a multiband antenna was designed, fabricated and measured to operate over two frequency sub bands 900 and 1800 MHz. After that, we simulated the same antenna, but now, in the presence of a human head model to analyze the head's influence. First, the influence of the human head on the radiation efficiency of the antenna has been investigated as a function of the distance between the head and the antenna and with the inclination of the antenna. Furthermore, the relative amount of the electromagnetic power absorbed in the head has been obtained. In this study the electromagnetic analysis has been performed via FDTD (Finite Difference Time Domain).

Addresses: [Pinho, P.; Casaleiro, J.] ISEL, Lisbon, Portugal

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