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Use of Metamaterials Structures to Reduce the SAR in the Human Head

Authors : Hafawa Messaoudi, Taoufik Aguili

Abstract : Due to the rapid growth in the use of wireless communication systems, there has been a recent increase in public concern regarding the exposure of humans to Radio Frequency (RF) electromagnetic radiation. This is particularly evident in the case of mobile telephone handsets. Previously, the insertion of a ferrite sheet between the antenna and the human head, the use of conductive materials (such as aluminum), the use of metamaterials (SRR), frequency selective surface (FSS), and electromagnetic band gap (EBG) structures to design high performance devices were proposed as methods of reducing the SAR value. This paper aims to provide an investigation of the effectiveness of various available Specific Absorption Rate (SAR) reduction solutions.

Keywords : EBG, HIS, metamaterials, SAR reduction
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