

Design of a Subcutaneous Implant Antenna for Brain Computer Interface

NIST

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The aim of this project is to design an implant antenna operating in the Ultrawide Band region. The antenna is intended to work in the human skull. Due to the nature of the human tissues, the antenna is going to be exposed to a high permittivity and lossy medium. Being exposed to a lossy medium has a strong negative effect on the radiation performance of antennas. Hence implant antenna design has its unique challenges as compared to antenna design in air. The goal here is to achieve both large bandwidth and high radiation performance. The antenna is going to be considered successful if it covers the whole UWB (3.1 GHz - 10.6 GHz) with a maximum size of 200 mm³ on a biocompatible flexible substrate.