

Abstract: A 4.8GHz implantable small printed antenna for wireless implantable body area network applications

Wireless implantable body area network (WiBAN) is useful in monitoring systems especially for medical diagnostic such as breast cancer, heart attack high blood pressure and others. The objective of this paper is to design an implantable small printed antenna for WiBAN applications and investigates the antenna performances in term of gain, efficiency, return loss, operating bandwidth and radiation pattern at different environments. The antenna is implanted in two types of environment which are in non-homogeneous layer (skin, fat and muscle) and the real human hand voxel model from CST Microwave Studio Software 2012. Simulations of the antenna performances inside the human body model are being studied. Results show that the antenna performances in term of resonant frequency and return loss are approximately similar for both environments. All the results will be guidelines in designing implantable antennas in futures.