

ABSTRACT

Ultra wideband (UWB) technology developing rapidly as a short-range communication technology with high data transfer. In the world of telemedicine technology UWB utilizes wide bandwidth. One of applications uses an antenna as signal sender for health monitoring, short duration and high data rates in large quantities. The realization of antennas for health applications using UWB technology requires bandwidth as needed and flexible antenna design is needed so that it can be used to maintain patient comfort.

The research was designed and simulated antennas with wide bandwidth at UWB frequencies for health applications. The influence of the distance antenna with human body, analysis of low SAR values is safe for body. In this design, modelling of the human body replaced phantom model consisting several layers.

The simulation results UWB antenna with fractional bandwidth of >50% at frequency of 6.85GHz off body conditions, VSWR value 1.24, fractional bandwidth 56%, gain 3.505dBi. Simulation using hand phantom testing VSWR value 1.39, fractional bandwidth 53%, gain 3.908dBi, SAR value at simulation 1.4W/Kg distance of 8mm from phantom, ordinary condition antenna VSWR 1.06, fractional bandwidth 52.86%, gain 3.505dBi. Testing using phantom hands VSWR 1.01, fractional bandwidth 50.06%.

Keywords : *wearable antenna, ultra-wideband, phantom, hexagonal patch.*