

Creeping Wave Antenna for Body Area Network Communication

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Abstract:

There is a huge attention of on-body tissue devices for wireless medical applications with wider bandwidth as medicine day by day and more and more is associated with electronics and electromagnetics. When the boundary to be curved, as in the case of propagation around a human body, the curvature of the surface leads to diffraction effects, yielding propagation over the surface of body as creeping wave. A loop antenna for over body surface communication for wireless body area network at 2.4 GHz is discussed. Based on antenna performance over the body surface, the designed antenna could be used for on-body communications, where creeping waves are dominated way of communications. Knowledge of the creeping wave behavior is essential to the optimization of on-body wireless body area network devices, whether the purpose is to minimize their effects or to take advantage of their existence.