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On-body investigation of a compact planar antenna on multilayer polymer composite for body-centric wireless communications

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Abstract

A compact wearable flexible antenna, designed for optimal on-body performance in the 2.45 GHz Industrial, Scientific and Medical (ISM) band, is proposed. Three different human body models (numerical three-layer and homogeneous tissue-equivalent model, and fabricated homogeneous tissue-equivalent phantom) are used to analyze the on-body performance of the antenna and specific absorption rate (SAR).The proposed antenna achieves more than 15.7 % on-body radiation efficiency in the whole ISM