

## Dual-Mode Antenna for Health Monitoring System in Body-Centric Wireless Communications

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Body-centric wireless communications (BCWCs) have become an active area of research owing to many applications, such as healthcare systems, identification systems, and entertainment. In this paper, a dual-mode antenna for body-centric wireless communications is studied. In on-body mode, the antenna is similar to a pair of metal electrodes operating at 10 MHz, and in off-body mode, with an L-shaped slit embedded, the antenna can cover the industrial, scientific, and medical (ISM) band (2.45 GHz). Since the proposed antenna is applied in BCWCs, the simulated received voltage and electric field distributions on the arm phantom, chest phantom, and high-resolution human model are discussed in this paper. Measured results, including reflection coefficient and radiation patterns in the ISM band (2.45 GHz) are presented to validate the proposed antenna.

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