Electric-Coupled Antenna for Hearing-Instrument Applications

An electrically small, electric coupled antenna that operates at the 2.4 GHz ISM band has been designed for hearing instrument applications. The antenna consists of a driven monopole and a coupled structure that is separated by an air gap. The input reflection coefficient S11 is measured and compared to the simulated results. Investigation of the antenna center frequency, reflection coefficient, and efficiency sensitivity to the position of the coupled element is performed. Simulated and measured results suggest that the antenna is a suitable candidate for hearing instrument applications.