In-the-Ear Hearing-Instrument Antenna for ISM-Band Body-Centric Ear-to-Ear Communications

A compact 2.45 GHz slot-loop antenna is implemented for the use in the outer shell of an in-the-ear (ITE) hearing instrument (HI). The antenna is optimized for high ear-to-ear path gain ($|S_{21}|$). The antenna simulation results are presented for two identical antennas, one placed in the center of each ear. A simulated path gain of $-75.0$ dB is obtained.