

Triple-band printed dipole tag antenna for RFID

Abstract :

In this paper, a triple-band printed dipole tag antenna is proposed for Radio Frequency Identification (RFID). The triple-band printed dipole antenna is designed to operate at 0.92 GHz, 2.45 GHz and 5.8 GHz using Computer Simulation Technology (CST) software. In order to achieve triple-band operation, the proposed antenna contains two branch elements, which act as an additional resonator. The designed antenna is fabricated using Taconic RF-35 substrate with a dielectric constant (ϵ_r) of 3.5 and thickness (d) of 0.508 mm. The antenna's parameters for triple-band operation are investigated and discussed. Then, this fabricated antenna is integrated with a UHF microchip to become a passive UHF tag. This tag is tested by measuring the reading distance and it is found that the proposed tag can be used for RFID application.