

Novel dual-band B-shaped printed monopole antenna for MIMO application

Abstract

Proposed antenna consists of B-shaped element which operates at dual-band frequencies (2.45 and 5.8 GHz). The antenna has been simulated using CST software and the prototype has been fabricated on FR4 substrate. The impedance bandwidths (BWs) that have been achieved are 29.9% and 33.8% for 2.45GHz and 5.8GHz bands respectively. The mutual coupling and correlation coefficient have also been investigated in which the antenna provides -22dB of mutual coupling and 0.02 of correlation coefficient. The proposed design achieves low mutual coupling and correlation coefficient at a separation distance of $\lambda/12$ between antenna arrays. There is good agreement between the measurement and simulation results in terms of return loss and radiation pattern

Keyword

B-shaped antenna; Dual-band; MIMO; Monopole antenna