

Design and application of a novel dielectric loaded helical antenna to WLAN products

Abstract

BST dielectric loaded helical antenna designed here was found to be as good to operate on WLAN products. Characteristics of the new dielectric material barium strontium titanate (BST) also known as dielectric resonator had helped maintained the antenna overall performance in terms of bandwidth, radiation pattern, gain and efficiency. Work done here was modeled and simulated using computer simulation technology microwave studio (CVST MW) software. The outcome shows good results after analyzing all of the fundamental scattering parameters. The gain obtained is around 6.745 dB while attaining nearly 90 percent total efficiency. Its strongest signal is at the horizontal or azimuth position. This antenna could be deployed if another wireless local area network access point (AP) was radiating mostly at the elevation position and need to avoid signal loss when mounted on wall ceilings.