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A dual-band array antenna using dome-shaped radiating patches

Abstract

A novel design of a dual-band array antenna for Wireless Local Area Network and Worldwide Interoperability for Microwave Access applications is presented in this article. The antenna operates at 3.5 dBi (the lower band) and 5.8 GHz (the upper band), with gains of 7.8 and 5.5 dBi, respectively. The corresponding percentage bandwidths are 2.85 and 2.40%. The overall length of the feeding network was reduced significantly because the elements in the array are closer to each other, with a separation of less than λeff/4. There is good agreement between simulation and measurement results. The results of the surface current study also are presented.

Keywords

Chamfering; Dome-shaped array antenna; Dual band; Length reduction