

High/Low Gain Rectangular Dielectric Resonator Antenna for WLAN Applications

A. Behloul, I. Messaoudene, L. Chouti, A. Benghalia

Abstract: In this paper, a novel integrated dual-port rectangular dielectric resonator antenna (DRA) is presented for 802.11a WLAN system applications. The antenna structure is formed by integrating the concept of antenna array with a single DRA element to produce a radiation characteristic necessity. The array is composed of four identical rectangular DRA elements placed on a horizontal ground plane and separated by a distance of 0.54λ at design frequency of 5.97 GHz, excited through rectangular shaped aperture slots by a microstrip transmission line from port 1. The central element fed from port 2 by 50 Ohm microstrip line via a slot etched on the ground plane. The designed proposed antenna sized of $60 \times 80 \times 0.672 \text{ mm}^3$ operates over the frequency band between 5 and 6 GHz for VSWR.

Keywords : High/Low Gain antenna, dielectric resonator antenna (DRA)