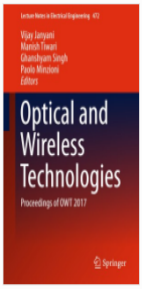

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Optical and Wireless Technologies

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A Reconfigurable Microstrip Antenna with Defected Ground Structure for Radio Applications

Harshal Nigam, Shubhi Jain and Ruchika Jain

Abstract A design of circular patch antenna having elliptical slot with defected ground substrate is being presented. It is designed for radio application. The antenna is reconfigurable, and we can switch between the C-band and X-band applications depending on the switching of diodes. Broadband applications in C-band and RADAR applications in the X-band can be switched. It is observed through analysis that dimensions of the antenna and slots are key factors for improving bandwidth of the geometry, here the antenna is fabricated on FR4 substrate with an elliptical slot and defected ground structure whose dimensions are optimized to get the best results and further the antenna is made reconfigurable.

Keywords Circular antenna · Elliptical slot · Broad bandwidth
Defected ground

1 Introduction

Antennas are having tremendous applications during last few years such examples are radio application, wireless communication [1]. Since antennas having many limitations like broad bandwidth polarization, larger size for better improvement nowadays antenna need compact size, high VSWR, high gain for fabrication, etc. Nowadays radiation pattern, VSWR are having important aspects in modern communication system. The antenna application will be planar and compact structures which can directly put inside the hand set. It will provide broadband performances which are all limitation of conventional microstrip antenna [2]. Many techniques have been proposed such as stacked patches. A new technique will be developed, i.e., defected ground structure to enhance the requirement of radio application [3].

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