A Multi Band EBG Resonator Antenna for Performance Enhancement in UHF Band Frequency Range

Volume 156 - Number 3

Year of Publication: 2016

Authors:
Gaurav Jain, Nitesh Kumar

10.5120/ijca2016912398

Abstract

A multiple band electromagnetic band gap (EBG) antenna is very important discussion topic in the area of antennas design because of its numerous advantages over conventional antennas i.e low cost, simple to feed, light in weight, easy fabrication process and their effective radiation characteristics. Patch antenna is also used with Microwave IC’s and Monolithic Microwave IC’s because of its compatibility. Utilization of electromagnetic band-gap (EBG) structures is becoming attractive in the electromagnetic and antenna community. In this paper, the effects of a two-dimensional electromagnetic bandgap (EBG) Structures on the performance of microstrip patch antenna and its overview study in past few decades are presented. Antenna gain enhancement using a holey dielectric superstrate on a microstrip patch antenna is also studied. The main objective of this paper is to get an inside into an EBG structure in order to work it as a resonator and various techniques to improve its bandwidth and gain for multiband application.

References
17. Y. Horii and M. Tsutsumi, “Wide band operation of a harmonically controlled EBG


Index Terms

Computer Science  Signal Processing

Keywords

Electromagnetic band gap (EBG), EBG resonator antenna (ERA), Broadband and Multi band shorting pins.