Abstract

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New Compact Circular Ring Microstrip Patch Antennas

In this paper, three different compact circular ring microstrip patch antenna structures have been proposed. These antennas have been analyzed, investigated &#97 &#110 &#100 optimized using the CST-MW-simulator. The proposed designs are mainly based on the concept of patch shape reconfiguration while its overall dimensions are kept constant. The objective is to design dual and/or triple broadband antennas resonate within the fourth generation band (4G). The presented antennas are simulated &#97 &#110 &#100 fabricated on cheaper &#97 &#110 &#100 lossy FR-4 substrate, &#97 &#110 &#100 their parameters are measured &#97 &#110 &#100 compared. The obtained results show that the proposed antenna structures resonate within the 4G frequency band. The operating bandwidths have been varied between 270.0 MHz &#97 &#110 &#100 1000.0 MHz (about 4% up to 7% of center frequency). In addition, maximum VSWR value of less than 1.5 has been achieved. The obtained results verify the validity &#97 &#110 &#100 the benefits of reconfiguring the patch shape. Finally, good agreement has been obtained between simulated &#97 &#110 &#100 measured parameters.