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Here, a compact and single-layer fractal patch antenna is proposed, having potential of bandwidth enhancement and harmonic rejection. For achieving these two crucial factors, a pair of quarter wavelength microstripline resonator is instigate and coupled in proximity to a rectangular patch. Miniaturization is explored by Koch slot to radiating edge of the reference antenna through its symmetry plan. The broadband property can be obtained by making partial ground and coupled radiating $\lambda/4$ resonators. This antenna is having a low-profile property since it does not need electrically thick substrate. Harmonic suppression-the necessity of highly advanced communication systems has achieved with aid of good aspects of $\lambda/4$ resonators and partial ground scheme. The antenna has been designed on FR4 substrate having dielectric constant 4.4 with an overall dimension of 34 mm * 36 mm * 1.5 mm. The substrate has thickness of 1.5 mm. According to simulated results, fractal patch antenna achieves good impedance matching over operating bandwidth 2.52–4.27 GHz (52.09%). Thus, it covers Wi-MAX 3.30–3.70 GHz band. Finally, an antenna operating at 3.5 GHz is designed on HFSS software operating at wide impedance bandwidth of 1752 MHz (see the below comparison table) and effectively wipe out higher order radiating modes up to fourth harmonics of fundamental frequency.

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About this book

This book is a collection research papers and articles from the 2nd International Conference on Communications and Cyber-Physical Engineering (ICCCE – 2019), held in Pune, India in Feb 2019. Discussing the latest developments in voice and data communication engineering, cyber-physical systems, network science, communication software, image- and multimedia processing research and applications, as well as communication technologies and other related technologies, it includes contributions from both academia and industry.



Innovative Technique to Realize Circular Polarization Using Sinusoidal Perturbation for Square Microstrip Antenna

Abstract

Innovative technique to produce circular polarization for square microstrip antenna using sinusoidal perturbation along its length is suggested. In and Out-of phase addition at corners of square patch

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Fractal Patch Antenna with Exalted Bandwidth and Harmonic Suppression for WiMAX Applications

Abstract

Here, a compact and single-layer fractal patch antenna is proposed, having potential of bandwidth enhancement and harmonic rejection. For achieving these two crucial factors, a pair of quarter wavelength microstripline resonator is instigate and coupled in proximity to a rectangular patch. Miniaturization is explored by Koch slot to radiating edge of the reference antenna through its symmetry plan. The broadband property can be obtained by making partial ground and coupled radiating $\lambda/4$ resonators. This antenna is having a low-profile property since it does not need electrically thick substrate. Harmonic suppression-the necessity of highly advanced communication systems has achieved with aid of good aspects of $\lambda/4$ resonators and partial ground scheme. The antenna has been designed on FR4 substrate having dielectric constant 4.4 with an overall dimension of 34 mm * 36 mm * 1.5 mm. The substrate has thickness of 1.5 mm. According to simulated results, fractal patch antenna achieves good impedance matching over operating bandwidth 2.52–4.27 GHz (52.09%). Thus, it covers Wi-MAX 3.30–3.70 GHz band. Finally, an antenna operating at 3.5 GHz is designed on HFSS software operating at wide impedance bandwidth of 1752 MHz (see the below comparison table) and effectively wipe out higher order radiating modes up to fourth harmonics of fundamental frequency.

Kshitija Sanap, Rekha P. Labade

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An Automatic Real Time Speech-Speaker Recognition System: A Real Time

