

Design of a Power Efficient Multiband Patch Antenna

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Abstract

A psi-shaped antenna design is proposed using Ansoft's HFSS software in this paper. In this structure, there is a rectangular slot above the monopole antenna and two metal strips besides that structure on the substrate with a slotted rectangular defected ground structure for wireless application. This monopole antenna can be used for WLAN, WiMAX applications. The structure is designed and optimized to operate at 2.5, 3.4, and 5.6 GHz frequencies. The size of the antenna is $34 \times 18 \times 1.6 \text{ mm}^3$. The presented multiband antenna has been designed, simulated by using HFSS software. The antenna has isolation more than 20 dB and peak gain is 3.81dBi. The antenna utilizes microstrip feed. The tri-band good resonance is obtained by rectangular strips. The performance parameters are satisfying the requirements. The gain, return loss, radiation pattern, efficiency, VSWR, 3D polar plot results have been studied through HFSS software. The simulation results satisfy general requirements for commercial use.
