A DESIGN OF FREQUENCY RECONFIGURABLE CPW-FED ANTENNA USING PIN DIODE FOR WIRELESS APPLICATIONS

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Abstract:

A frequency reconfigurable CPW-fed antenna using PIN diodes is proposed in this paper. The antenna uses two PIN diodes located on the radiating patches to achieve frequency configurability. By switching states of the two PIN diodes, the proposed antenna can operate at three configurations. The antenna can cover three bands with the center resonant frequencies of 2.1 GHz, 2.6 GHz, and 3.3 GHz. The antenna dimensions are calculated based on theoretical formula of CPW fed antenna, then simulated and optimized using CST Microwave and CST Design software. The proposed antenna is designed on FR4 substrate with the permittivity of 4.4. The overall size of the antenna is *24x34x1.6 mm*^{3} which is suitable for small wireless handsets. The antenna can be used for UMTS, LTE, and WiMax applications

Key words: Reconfigurable antenna; Frequency reconfigurable antenna; CPW fed antenna; PIN diode; Antenna for wireless handsets.