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Abstract
The characteristics of the dipole antennas for radio frequency identification system (RFID) have been investigated in this paper. The major topics of this paper include the folded-type dipole antenna and the folded slot antenna with a coplanar waveguide (CPW) feed. The printed folded dipole antenna is constructed of microstrip lines printed on a FR4 board on 50Ω impedance system in this paper. We attached to a balance to unbalance circuit (balun) to manufacture folded-type dipole tag antenna and we examined the antenna to achieve better performance with the given RFID tag chip and the measured range can be read. A RFID tag antenna applications in 2.45GHz can be obtained. Experimental results indicate that the maximum operating range about 5.5m - 6 m in a real 900MHz RFID system. In the same theory, we modified the folded-type dipole of tag antenna with balun, and changed the shape of the conducting plate on the folded-type dipole of tag antenna, investigated the impedance bandwidth of the antenna, but also radiation patterns and gain in the same terms.
The second proposed antenna adopts folded slot antenna of coplanar waveguide (CPW) feed used in RFID reader. By folded slot of coplanar waveguide feed, a dual-band operation of fold slot antenna is achieved, which is conform to RFID applications in 2.45GHz and 5.2GHz.
In this paper, we not only investigate the impedance bandwidth of the antenna, but also radiation patterns and gain.
Advisory Committee Wen-Shan Chen - advisor

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