CHAPTER EIGHT

Flexible Pentagonal Monopole Antenna

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Abstract

A flexible pentagonal monopole antenna is proposed to operate at multiple frequencies (1.57, 3.5, 5.2, 5.5, 5.8) GHz. The antenna is suitable for GPS, WLAN, WiMaX and ISM band applications. The antenna is printed on Kapton polyimide substrate with (49 × 34) mm dimensions and fed by a Coplanar Waveguide Transmission (CPW) line. Results show that the proposed antenna is capable of radiating efficiently at the claimed frequencies with good impedance matching.

Keywords: Coplanar waveguide, flexible antenna, Kapton polyimide, monopole antenna.

1. Introduction

Recently, flexible electronic devices have attracted a large number of research activities due to their promised applications in different fields such as military, medical, scientific, firefighting, personal communication and Radio Frequency Identification (RFID) [1]. These electronic devices need to be integrated with flexible antennas to provide wireless