

FLAT-PLATE TRIANGULAR MONOPOLE ANTENNA FOR Wi-Fi/WIMAX/DVB-H APPLICATIONS

Lev Pazin, Igor Kogan, and Yehuda Leviatan

Department of Electrical Engineering, Technion-Israel Institute of Technology, Haifa 32000, Israel; Corresponding author: leviatan@ee.technion.ac.il

Received 6 March 2008

ABSTRACT: A novel printed multiband flat-plate monopole antenna is presented. The proposed antenna consists of a slotted triangular monopole embedded in a rectangular notch in the antenna ground plane part. Simulated and measured results of the input return loss for the proposed antenna are in good agreement. The antenna has been shown to operate satisfactorily in the 0.42–0.92, 1.8–2.7, 3.1–3.8, and 4.9–6 GHz frequency bands, and is therefore very suitable for use in applications including Wi-Fi, WiMAX, and DVB-H. © 2008 Wiley Periodicals, Inc. *Microwav Opt Technol Lett* 50: 2922–2925, 2008; Published online in Wiley InterScience (www.interscience.wiley.com). DOI 10.1002/mop.23821

Key words: mobile antenna; multiband antenna; triangular monopole

1. INTRODUCTION

The quest for compact multiband antennas that can allow laptop computers to offer not only wireless communication but also TV reception functionalities is growing. Such antennas should therefore operate effectively not only over the Wi-Fi frequency bands of 2.4–

this has naturally come at the expense of rendering the antennas not fully planar. Planar antennas, one dual-band for DVB-H (0.47–0.87 GHz) and DMB (1.452–1.492 GHz) services and another wideband for DTV (0.47–0.74 GHz) services have been recently introduced in [7]. The notch and monopole part in each of these two antennas are of rectangular shape. The monopoles are embedded in their entirety in the ground plane. The monopoles are also slotted in order to achieve wider bandwidth.

In this article, we propose a novel printed flat-plate monopole antenna that is somewhat similar to those introduced in [7], but

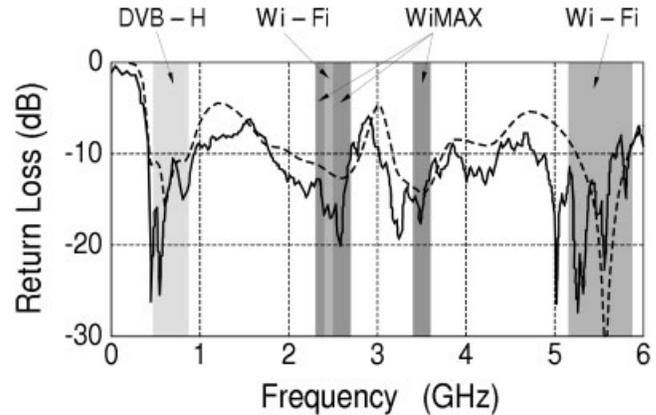


Figure 2 Simulated and measured input return loss of the proposed multiband antenna when it is free-standing: simulated (dashed line) and measured (solid line)