

A BROADBAND SLOPE-STRIP-FED MICROSTRIP PATCH ANTENNA

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ABSTRACT: *A novel slope-strip feeding technique for a microstrip antenna is presented in order to achieve a broad bandwidth. The experimental results show that the optimal bandwidth attained is 53.4% for less than -10-dB return loss.* © 2004 Wiley Periodicals, Inc.

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1. INTRODUCTION

In recent years, microstrip patch antennas have been popular with antenna engineers due to their well-known characteristics of low cost, light weight, and high conformability. But the inherently narrow bandwidth, of which only a few percent can be attained, is the major weakness of a microstrip patch antenna. Some efforts to achieve bandwidth enhancements been made presented in the literature, including the use of thick substrate [1] and various feeding methods [2]. With the employment of the aperture-coupling technique introduced by Pozar in 1985 [3], the typical bandwidth attained was about 22% for the single-layer case and 37% for the stacked dual-patch antenna. Another feeding method with a U-shaped slot for a probe-fed patch [4] has typically achieved 30% bandwidth. Recently, a proximity feeding technique with an L-strip [5] was applied to a microstrip antenna, resulting in