

# Miniature Antenna for UWB Applications

陳銘鴻, 莊添民

Electronics Engineering

Engineering

tim@chu.edu.tw

## Abstract

A low-cost, miniature-sized and isotropic Ultra-wideband (UWB) antenna is presented. In this paper, we will use a 3D EM simulator, HFSS, to design antenna. We employ exposure and development process to fabricate the miniature antenna, which is fed by a microstrip line and built on a FR-4 substrate with size of 22mm × 38mm<sup>2</sup>. Via measurement, the antenna's matching characteristics and radiation patterns were obtained. The frequency band designed by this study is from 3.1GHz to 10.6GHz, targeting for UWB applications. Return loss is under -10dB and the gain range of the antenna is from 2dBi to 3.3dBi in this frequency band. Meanwhile, radiation patterns comply with requirements.

Keyword : radiation patterns, exposure, development, miniature antenna