

# The Characteristic of Dipole Antenna in the water

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## ABSTRACT

The dielectric constant of antenna in the air and water is different, the dielectric constant in the air is 1, and the dielectric constant in the water is 81, in order to understand the radiation characteristics in the water, we design a dipole antenna which can radiate in the water. We simulate radiation pattern and return loss by HFSS, and manufacture a simple dipole antenna, we measurement radiation pattern and return loss by vector network analyzer and 4-axes measurement system, we discussed the electromagnetic wave propagation effects on the different media in the water.

Keywords : Dielectric constant, Radiation pattern, Vector network analyzer

## Table of Contents

封面內頁 簽名頁 授權書 . . . . .	iii	中文摘要 . . . . .	iii
. . . . .	iv	英文摘要 . . . . .	v
. . . . .	vi	目錄 . . . . .	vii
. . . . .	ix	表目錄 . . . . .	xi
第一章 緒論 1.1 簡介 . . . . .	1	1.2 研究動機 . . . . .	1
1.3 論文架構 . . . . .	2	第二章 基本原理 2.1 介質之電磁特性 . . . . .	
. . . . .	4	2.2 電磁波醫療檢測 . . . . .	7
. . . . .	12	第三章 水中偶極輻射天線 3.1 水中天線發展 . . . . .	
. . . . .	14	3.2 水中偶極天線基本原理 . . . . .	13
. . . . .	23	3.3 水中偶極天線設計 . . . . .	
. . . . .	23	第四章 場型量測 4.1 偶極天線反射損耗量測結果 . . . . .	22
. . . . .	34	4.2 偶極天線輻射場型量測結果 . . . . .	
. . . . .	34	4.3 偶及天線量測結果比較 . . . . .	23
. . . . .		第五章 結論 . . . . .	
. . . . .		參考文獻 . . . . .	35

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