Wide-band Matching Technique for VHF and GPS dual antenna set

ABSTRACT
The development of science and technology in recent years, the maximization gradually of fishing boat, and it catch technology progress day by day too, cause global total catch increase over 100 million metric tons suddenly and violently, make global fishery resources deficient day by day. So in order to strengthen fishery's resource management of high seas, guarantee the continuous utilization of marine fishery resources, the United Nations require that should install the monitoring system of fishing boat in the fishing boat of its water areas work had (Vessel Monitoring System; VMS) , In order to monitor the boat. The system antenna is use GPS antenna. The frequency band of the communication among fishing boat and fishing boat is VHF frequency band, So design an antenna which accords with the fishing boat communication for fishing boat communication, the structure of the antenna uses Sleeve dipole form, and combine GPS antenna with Sleeve dipole antenna, for save volume. Because the impedance between two antennas not match, has used Transformer in order to overcome the f impedance not match. Combine the GPS and VHF dual band antenna. Finally combine two antennas, sleeve dipole and GPS antenna to one antenna. Reduce the user volume successful.

Keywords : Sleeve dipole ; VHF ; Global Positioning System

Table of Contents
第一章 序論 1.1 研究動機與目的............... 1 1.2 簡介漁船監控系統............ 1.2.1 ARGOS 系統.............. 2 1.2.2 Inmarsat-C 系統............ 3 1.3 頻譜管理.................. 3 1.3.1 國際上之規範............. 4 1.3.2 頻譜管理範疇與目標.......... 5 1.3.3 頻譜管理機制............ 6 1.3.4 頻譜規劃原則............. 6 1.3.5 頻率指配原則............. 7 1.3.6 頻率有效使用............. 7 1.4 研究方法................. 8 1.5 論文結構................. 9
第二章 基本原理 2.1 套筒偶極天線介紹及原理.......... 13 2.2 VHF及GPS頻段與應用............14 2.2.1 簡介VHF頻段............ 14 2.2.2 簡介GPS頻段.............15 2.3 阻抗匹配器基本原理.......
第三章 套筒偶極天線模擬設計與其分析 3.1 原理與設計方法 ...............30 3.2 模擬與製作............. 30 3.3 量測與分析 .................31
第四章 雙頻天線設計及量測 4.1 阻抗匹配器接腳介紹.............37 4.2 整合VHF及GPS雙頻實做..........37 4.3 阻抗量測

第五章 結論及未來研究方向.............. 59

REFERENCES
[4] 全球衛星定位系統(無日期)。屏東科技大學高中職類科在職進修網。(無日期),取自:
http://www.forestry.npust.edu.tw/%BA%F4%B8%F4%B1%D0%A7%F7/gps.htm