

迴旋扇葉結構對電波迴響室場強均勻度影響之研究

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摘要

近年來，隨著人們對電器產品的日漸依賴，除了考慮電器本身的動作外，對於電磁相容的特性也日益注重。包括IEC(國際電子技術委員會)、ANSI(美國國家標準)等單位分別針對航空、軍規、一般消費性等級規範電子、電器產品的電磁干擾和電磁耐受標準。要求電子產品商品化要先通過電磁相容的測試，隨著各國的政府單位制訂了電磁相容的標準，也因而帶動了標準電磁相容測試場地的市場。本文先針對開放測試場地、電波暗室、半電波暗室一直到電波迴響室的電波傳播特性以及場地均勻度做簡要的介紹。接著建置電波迴響室的模擬測試場地並改變裡面的迴旋扇葉形狀及利用IEC61000-4-21草案的八點探針法及EN50147-3的圓柱十五點測試法來分析電波迴響室內場地均勻度的模擬結果。電波迴響室(亦稱模態擾動室)，是一個很大、含扇葉且高導電率的金屬空腔，用來進行電磁波的散逸及耐受性測試。在利用來作電磁測試之前，必須先滿足規範的場地不確定度及場地均勻度測試。本文主旨在探討矩形迴響室內不同扇葉、取樣次數對電場分佈的特性分析，藉由饋入高斯脈衝波得到模擬結構內電場分佈的值來進行取樣來和期望值相比對，以期能藉由統計資料找到更容易使場地均勻度達到要求的扇葉架構設計方向。

關鍵詞：電波迴響室；電磁相容；電波暗室；場地均勻度；電磁干擾；IEC 61000-4-3；IEC 61000-4-21；EN50147-3

目錄

第一章 緒論	1.1 簡介.....1	1.2 研究動機與目的.....2	1.3 論文大綱.....3
第二章 電磁相容測試場地的電波傳播特性.....4	2.1 開放測試場地電波傳播特性.....4	2.1.1 場地衰減量.....4	2.1.2 電磁波極性對正規化場地衰減量的影響.....5
2.2 電波暗室電波傳播特性.....9	2.2.1 半電波暗室.....9	2.2.2 全電波暗室.....10	2.2.3 電波暗室的場地衰減度.....11
2.2.4 射線追蹤模型.....12	2.2.5 場地均勻度.....12	2.3 電波迴響室電波傳播特性.....16	2.3.1 電波迴響室.....17
2.3.2 矩形波導共振腔.....17	2.3.3 共振頻率及模態.....17	2.4 測試場地的比較.....24	第三章 研究方法：時域有限差分法.....27
3.1 有限差分法的架構.....27	3.2 馬克斯威爾方程式的時域有限差分法演算進程.....32	3.3 余氏演算法.....35	3.4 吸收邊界條件.....40
3.5 解析空間的訂定之切割方法.....40	3.5.1 均勻、非均勻網格切割法.....41	3.5.2 次網格切割法.....42	3.5.3 次單胞切割法.....42
3.6 空間網格的色散現象.....45	3.7 Courant穩定性條件.....45	第四章 電波迴響室利用FDTD數值分析模型建立.....47	4.1 空間架構的設立.....47
4.2 模擬天線的選定.....47	4.3 迴旋扇葉的選擇.....48	4.4 模擬設定說明.....51	4.5 迴旋扇葉對迴響室內電場的影響.....59
4.5.1 迴旋扇葉對迴響室內平均電場的影響.....59	4.5.2 迴旋扇葉對迴響室內最大電場的影響.....59	4.6 利用統計的方式來取樣數據.....63	第五章 結論.....73
參考文獻.....75			

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