內建於行動裝置之新式FM天線

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摘 要

本論文提出一支可內建於行動手提通訊裝置的調頻(FM)天線，它可接收由廣播電台所放送的電波，收聽所有FM頻道的廣播節目。天線單體尺寸僅為25×5×1 mm3(長*寬*高)，是以四分之一波長單極(monopole)天線方式，螺旋纏繞於玻璃纖維板(FR4)基材上。製作的首要步驟，先以電磁場數值方法軟體，進行天線的形狀及纏繞方式設計。於軟體中進行精確的模型建立。模型數值運算完成，觀察模擬結果，調整合適之線寬、線距、形狀等幾何參數，使天線共振頻率能準確符合FM頻帶規範：88 MHz ~ 108 MHz。實作部份將天線放在FR4板上，測試將此天線放於行動裝置上是否能正常接收FM廣播節目。最終之模擬與量測結果，均顯示本天線適宜之性能與實用之特點。

關鍵詞 : FM天線、單極天線、晶片型天線

目錄

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