應用在現代行動通訊之平衡式饋入平面天線

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摘 要

本論文提出兩個應用於現代行動通訊之平衡式饋入的平面天線：T型單極天線與三角微帶天線。此T型單極天線是由帶線結構的饋入來取得平衡式訊號，天線的結構相當微小並且擁有抵抗接地面大小變化的能力。此平衡式T型天線的設計可分為三步驟：⑴設計一個應用在IMT-2000頻帶的非平衡式T型天線；⑵設計一個應用在同－頻帶的Broadside-edge-coupled balun；⑶整合第一步驟的天線跟第二步驟的Balun，使之成為平衡式饋入天線。在此，建構出一個應用在第三代行動通訊IMT-2000頻帶的天線，並以模擬跟實際量測去探討天線的反射損耗、輻射場型，其結果證實了天線的寬頻和全向性輻射，足以涵蓋IMT-2000的頻帶，而頻帶內的最大天線增益則為2.6 dBi。三角微帶天線的設計流程跟T型天線大致相同，比較值得－提的是，平衡式三角微帶天線的頻寬更寬，總共包含了五個應用頻帶：DCS、PCS、IMT-2000、WLAN、WiMax，比以往只能涵蓋一個應用頻帶的平衡式天線，擁有更充足的頻寬。

關鍵詞 : 平面天線 ; 平衡式饋入天線 ; 行動通訊

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