

新型縮小化超寬頻印刷式天線設計

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此篇論文設計了三支新型的超寬頻印刷式天線，首先介紹的是一支具圓弧邊緣結構之印刷式單極天線，它是以平面單極天線為設計基礎再加上多個圓弧形曲線段所構成的超寬頻天線；此天線在頻段 3GHz~10.6GHz 其反射損失小於 -10dB，其輻射場型(在 3GHz 至 8GHz 頻寬範圍內)和單極天線的輻射場型相似。

第二支超寬頻天線也是以平面單極天線為設計基礎，與第一支超寬頻天線不同處在於此天線是由二條左右對稱的二項式曲線所構成的，此天線匹配頻寬範圍從 3GHz 至 10.6GHz，而在小於頻率 8GHz 可測得接近全向性的場型。

論文的最後一支天線其結構和第二支超寬頻天線一樣利用相同方式設計，但是天線面積卻大約是第二支超寬頻天線的四分之一(含地面)，其匹配頻寬範圍從 3GHz 至 6.2GHz，具有和單極天線近似的輻射場型。

Design of Novel Miniaturized Ultra-Wide-Band(UWB) Printed Antennas

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In this thesis three novel ultra wide band, printed antenna has been designed, an introduction begin with a printed antenna with arc edge structure. Based on the printed monopole antenna design, this ultra wide-band antenna is contrasted with several arc and curve; which reflection losses is smaller than -10 dB at 3GHz ~ 10.6GHz frequency range, it's radiation pattern within this range is very much similar to the monopole antenna.

The second ultra wide-band antenna is also based on the design of planar monopole antenna, unlike the previous one this antenna is made by two symmetrical binomial curve, this antenna matched in the wide frequency range from 3GHz to 10.6GHz, and it's pattern is close to omnidirectional under 8GHz.

The structure of the last antenna in this thesis is designed in the same method as the second, but it's area is about 1/4 of the second one(including ground plane), it's matched frequency range is from 3GHz to 6.2GHz, having a approximate radiation pattern as monopole antenna.