

Analysis and Design of Antennas for Wireless LAN

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ABSTRACT

In this thesis, three distinct designs of printed antennas, used in PCMCIA WLAN card, have been presented. First a 2.4GHz diversity meander-line antenna is constructed. By changing both the length of the line and the width of seams between the lines, it yields a bandwidth of 528MHz. Next a 2.4 and 5.2GHz dual-band antenna is devised. The dual frequency was achieved by adding both a U- and L-shaped slots to a plane inverted-F antenna, a dipole. The uniqueness of this design is the effective use of limited antenna area of the card and it also meets the IEEE 802.11 a/b/g specs all in one. Last a 2x2 patch array antenna is constructed. It serves as a source antenna for setting up a pre-test environment in the work area. The pre-test environment enables preliminary measurement of antenna field patterns. It also facilitates quick fix-up in constructing a target antenna.

Keywords : PCMCIA , 平面偶極天線 , 平面倒F型天線 , 簡易量測場

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