

WP802b Antenna Description

The Enfora Wireless LAN Portfolio is an 802.11b device that incorporates an internal antenna for wireless communication to external access points. The antenna is a variation of a simple dipole, made of copper etched on PCB. To achieve the proper radiation pattern the field around the antenna must be free of any reference ground plane; therefore the antenna is placed in a region of the PCB void of any ground plane (a 1-inch wide area between the ground plane and edge of the PCB.)

Normal operation of the antenna is achieved only when the portfolio is completely assembled. The dielectrics of the PCB (FR4 material, 62mil thick, 6-layer stack-up) and the plastic housing that fits over the PCB affect the tuning of the antenna's center frequency. The combined dielectric of the PCB and the housing tunes the antenna to its nominal center frequency of 2.439GHz, with a bandwidth of 83MHz.