Abstracts

Maximizing signal strength for OFDM inside buildings

E.P. Lawrey and C.J. Kikkert. "Maximizing signal strength for OFDM inside buildings." 2001 Transactions on Microwave Theory and Techniques 49.11 (Nov. 2001 [T-MTT] (Special Issue on the 2000 Asia-Pacific Microwave Conference)): 2131-2136.

Propagation inside buildings suffer from large shadowing and high multipath effects. This is a serious problem for wireless local area network (WLAN) systems. This paper shows that shadowing and path loss can be minimized by exploiting the multipath tolerance of orthogonal frequency-division multiplexing (OFDM). This can be achieved by using multiple transmission antennas spread over the area of a WLAN cell. These antennas act as repeaters, transmitting and receiving the same signal at the same time. This decreases the average path loss, but increases the multipath delay spread. Using OFDM allows the advantage of reduced path loss to be utilized without detrimental effects of inter-symbol interference caused by the increased delay spread. The reduced path loss allows an increased system capacity, quality of service, or a decrease in intercellular interference in a cellular WLAN.

❑ Return to main document.