

Experimental Description:

(a) The complete program of research and experimentation proposed including description of equipment and theory of operation.

We plan to evaluate the suitability of the I.WiLL wireless access point manufactured by WiLAN, Inc. of Calgary, Alberta, Canada (<http://www.wi-lan.com>) for providing high-speed wireless internet access to fixed subscribers.

The frequency, power, and bandwidth of the I.WiLL system are all compliant with the 2.4 GHz ISM regulations, but the spreading method is currently under FCC review. It has been approved for use in Canada.

The spreading method is combined Direct Sequence Spread Spectrum and Wide-band Orthogonal Frequency Division Multiplexing (OFDM.)

(b) The specific objectives to be accomplished.

We wish to compare the performance of the I.WiLL system (using OFDM spreading) to IEEE 802.11 wireless LAN products (which use direct sequence spread spectrum). Of particular interest is the range attainable in dense urban environments with severe non-line-of-sight multipath propagation. The OFDM technique should offer improved performance where there is strong multipath propagation.

(c) How the program of experimentation has a reasonable promise of contribution to the development, extension, expansion, or utilization of the radio art, or is along line not already investigated.

This experimentation will allow us to develop products for high-speed wireless internet access. These products will offer lower costs and higher data rates to consumers than currently available products.