

The Natural and Man-Made Noise Environments in
Personal Communication Services Bands

Robert J. Achatz
U.S. Department of Commerce
National Telecommunications and Information Administration
Institute for Telecommunication Sciences
325 Broadway
Boulder, Colorado 80303 USA
Telephone: (303) 497-3498

The physical layer working group of IEEE 802.11 has been discussing the multipath characteristics of the indoor channel for some time. The Institute has prepared two submissions which have reported the results of multipath measurements for office (IEEE P802.11-93/41) and warehouse (IEEE P802.11-93/112) environments. The office measurements have been made available for use by the IEEE 802.11 standards committee for a nominal fee.

The other component of the indoor channel which has not been widely discussed is its additive noise characteristics. Dr. A.D. Spaulding at the Institute has written a report entitled "The Natural and Man-Made Noise Environment in Personal Communications Services Bands" that addresses the additive noise problem. This report is in final review, however to expedite the standards process, a draft version is available upon request. The abstract to the report is as follows:

This report presents a summary of the available measurement information on the level and statistical characteristics of the background noise environment in the frequency range 1-3 GHz. The frequency range covers the proposed frequencies for the new personal communications services. Both natural and man-made unintentional radiations are covered, both the general overall background and noise for individual sources. The urban noise environment in this frequency range is due primarily to automotive ignition systems. The noise is non-Gaussian in character, but not highly impulsive.

IEEE 802.11 standards committee members who would like more information on the Institute's indoor channel multipath measurements or a copy of Dr. A.D. Spaulding's report should contact Robert Achatz at the above address or phone number.