

Path-Loss And Time Dispersion Parameters For Indoor UWB Propagation

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Summary

The propagation of ultra wideband (UWB) signals in indoor environments is an important issue with significant impacts on the future direction and scope of the UWB technology and its applications. The objective of this work is to obtain a better assessment of the potentials of UWB indoor communications by characterizing the UWB indoor communication channels. Channel characterization refers to extracting the channel parameters from measured data. An indoor UWB measurement campaign is undertaken. Time-domain indoor propagation measurements using pulses with less than 100 ps width are carried out. Typical indoor scenarios, including line-of-sight (LOS), non-line-of-sight (NLOS), room-to-room, within-the-room, and hallways, are considered. Results for indoor propagation measurements are presented for local power delay profiles (local PDP) and small-scale averaged power delay profiles (SSA-PDP). Site-specific trends and general observations are discussed. The results for path-loss exponent and time dispersion parameters are presented.

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