

Plenary Talk

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Looking for the Ultrawideband Communications Niche

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Abstract

The healthy survival of ultrawideband (UWB) communications technology depends on finding the environment that supplies the factors necessary for its development. Environment is a word that can encompass many things: research and development, the RF environment, implementation technologies, regulation, standards, markets, etc. Presented here is a high-level view of the factors that affect performance capabilities of UWB systems.

The U.S. Federal Communications Commission set the ground rules for radiating UWB signals for various applications. These bound the achievable system performance characteristics in a way that currently is being explored by various academic and commercial entities. This talk enumerates some of the capabilities and problems of UWB communication systems, as predicted formally by basic communication-theoretic results. Information gleaned from the study of UWB indoor propagation will be reviewed, and its effect on UWB radio design will be explained. The attendees will have to draw their own conclusions regarding the best niche for commercial UWB applications.