

Ultra Wide Band as a multipurpose Robust and Reliable Wireless Technology for Testing, Spacecraft and Launcher Communications

Activity:

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Abstract:

This work is devoted to the feasibility study of a wireless sensing system, mainly based on passive surface acoustic wave (SAW) sensors, for remote measurement of temperature aboard space platforms. The use of passive sensors is particularly attractive since they need no battery and are robust in extreme environments, as they contain no active electronic circuits. The main objective of this study is the complete characterization of the wireless system environment, in order to determine the main fundamental limits of this technology from a communication theory point of view. Preliminary experimental measurements are used for both defining the main environment parameters, validating some of the theoretical limit computations and proving the space application feasibility.