

An Experimental Validation for Broadband Power-Line Communication (BPLC) Model

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Abstract

Recently, different models have been proposed for analyzing the broadband power-line communication (BPLC) systems based on transmission-line (TL) theory. In this paper, we make an attempt to validate one such BPLC model with laboratory experiments by comparing the channel transfer functions. A good agreement between the BPLC model based on TL theory and experiments are found for channel frequencies up to about 100 MHz. This work with controlled experiments for appropriate validation could motivate the application and extension of TL theory-based BPLC models for the analysis of either indoor or low-voltage or medium-voltage channels.

Keywords

Branched network; broadband power line; frequency response; indoor channel; low-voltage channel; medium-voltage channel; multipath; power-line channel; transfer function