

Abstract

An important area of computer technology, particularly in the analysis of telecommunication networks and systems are modeling of complex radio systems and processes to evaluate and identify their performance and parameters. With the content of computer models being developed a new device can be much faster and more cost effective to identify weaknesses and pursue correction of system than to create a real prototype. Computer simulation tools allow to carry out experimental studies of real devices in a virtual environment that leads to the evaluation of possible improvements of the proposed devices prior to their practical implementation. Building a computer model is accomplished using specialized software packages, called a virtual environment modeling. The most powerful tools include virtual simulation software such as Matlab/Simulink LabVIEW [1]. In fact, we can quite easily measure and analyze the most important characteristics of wireless communication systems using a virtual environment, therefore its application for present thesis project is beneficial. Modeling those systems needs an integrated approach including modeling the transmission channels, digital signal processing techniques, transforming signals and performance evaluation.

Thus, I choose to work with LabVIEW to simulate the physical layer of an embedded wireless communication system, namely BPSK.