Abstract

Long Term Evolution (LTE) is an advanced standard of the mobile communication systems. LTE has been developed by the 3rd Generation Partnership Project (3GPP). The new features exhibited by LTE is a direct impact of applying new modulation and coding techniques such as the Orthogonal Frequency Division Multiplexing (OFDM) for the Downlink and the Single Carrier Frequency Division Multiple Access (SC-FDMA) for the Uplink as well as turbo coding. This paper presents a Field Programmable Gate Array (FPGA) design and implementation of the transmitter of the LTE downlink physical layer according to releases 8 and 9 on Virtex 6 XC6VLX240T FPGA kit using Xilinx® ISE® Design Suite version 12.1.
- LTE; Evolved Universal Terrestrial Radio Access (E-UTRA); Physical channels and modulation (3GPP TS 36.211 version 8.3.0 Release 8), ETSI TS 136 211 V8.3.0 (2008-11), Technical Specification.
- Sung-won Kim, Kun-yong Kim, "Physical layer verification for 3GPP LTE (FDD)", Agilent Technologies.

Index Terms

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