

# An Energy Efficient Transceiver for Visible Light Communication

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## ABSTRACT

Visible Light Communication (VLC) shows up as a trend for short-range, high-speed wireless communication, which becomes a promising communication technology for the industry. However, the lack of energy efficiency is one of a key problem arises during the implementation of this technology. In this paper, we propose an energy-efficient transmitter and receiver design for a VLC communication system. To enhance the energy efficiency of the designs, we incorporated power electronics switching circuits. Also, we analyse a suitable channel model which can be used with the proposed VLC transmitter and receiver. Comprehensive simulation results are obtained using Matlab Simulink model of the proposed design and compared with an existing VLC system. Our analysis clearly shows that the energy efficiency of the proposed model is enhanced compared to the existing VLC system.

**Keywords:** keyword VLC, Transmitter, Receiver, Energy-efficient, Channel model, Matlab, Simulink

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