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**Performance Analysis of an LED based Visible Light Communication System
for Indoor Data Transmission**

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This paper presents a practical scheme for analyzing the performance of a Visible Light Communication (VLC) system in an indoor environment. The performance of the visible light communication system depends on several factors such as the distance between the transmission and receiver ends, data transmission speed, noise and, receiver and transmitter characteristics. In the research work, the applicability of different photodetectors was tested for different Light Emitting Diode (LED) colors. The performance of the proposed VLC system was measured in terms of Bit Error Rate (BER) for different bit patterns, lengths and baud rates. The effect of background lighting and the noise generated from the circuit components is minimized in the developed system in order to improve the accuracy of the measured results. The results are presented for different distances between the transmitter and receiver and the performance is compared in terms of the maximum achievable coverage distance.

Keywords: visible light communication, light emitting diodes, photodetectors, bit error rate, baud rate