

Abstract

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Error Rate Performance of Pulse Position Modulation Schemes for Indoor Wireless Optical Communications

Error rate performance of pulse position modulation (PPM) schemes for indoor wireless optical communication (WOC) applications is investigated. These schemes include traditional PPM and multiple PPM (MPPM). Study is unique in presenting and evaluating symbol error behaviour under wide range of design parameters such symbol length (L), number of chips per symbol (n), number of chips forms optical pulse (w). Effect of signal to noise ratio levels and operating bitrates on symbol error performance is also discussed. A comparison between studying modulation schemes is done. Relation with IrDA and IEEE 802.11 indoor WOC standardization is also investigated. Results indicate that PPM achieve great symbol error performance at reasonable signal to noise ratio and high bitrates with large symbol length.