



Influence of Asymmetric Pulses in Spread Spectrum Systems

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This paper examines the impact of asymmetric pulses in NRZ waveforms generated by maximum-length sequences and used in spread spectrum systems. The data asymmetry phenomenon is produced by differential propagation delays through logic circuits in the payload s. A model of three elementary pulse shapes is employed to characterize the signal source and the occurrence probabilities for each is calculated. The autocorrelation function of the waveform is eventually obtained taking into account the asymmetry, and some numerical evaluations are finally presented to show the deviation from the theoretic case where no asymmetry is considered.

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