

Signal Statistic and Informational Parameters of Deterministic Chaos Transistor Oscillators for Infocommunication Systems

Abstract:

The paper presents electrical circuits and mathematical models for two versions of a transistor Colpitts oscillator. The chaotic dynamic of these Colpitts oscillator versions has been researched. Ultra-wideband chaotic signals of these two Colpitts oscillator versions are applied practically in infocommunication circuits. Statistic and informational parameters of two Colpitts chaotic oscillator versions have been numerically calculated. Spectrum of Lyapunov exponents and chaotic signal cross correlation coefficients have been calculated as statistical parameters and characteristics. Entropy and fractal dimension of chaotic signals have been calculated as informational parameters.

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