

Increasing of information reliability of digital communication channels under conditions of high intensity noise

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Providing a high level of information reliability is one of the most important problems of digital data transmission systems synthesis for various applications. The paper suggests the theoretical foundations of communication channel model based on a code signal feature (CSF). The encoding and decoding algorithms using CSF models are proposed that allows one to increase the information reliability in digital communication systems with serial synchronous interface. The symbols of the primary source code are transmitted by signals based on the secondary code in the form of sequences of short pulses rigidly connected by the fixed time intervals, which are the multiples of a predetermined value of time interval Δt . The expressions for reception results probabilities calculation are obtained allowing one to evaluate the information reliability of the communication system.