

## Hyperchaos-Based Video Encryption for Device-To-Device Communications

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**Abstract :** In this paper, we present a software development of video streaming encryption for Device-to-Device (D2D) communications by using Hyperchaos-based Random Number Generator (HRNG) implemented in C#. The software implements and uses the proposed HRNG to generate key stream for encrypting and decrypting real-time video data. The used HRNG consists of Hyperchaos Lorenz system which produces four signal outputs taken as encryption keys. The generated keys are characterized by high quality randomness which is confirmed by passing standard NIST statistical tests. Security analysis of the proposed encryption scheme confirms its robustness against different attacks.

**Keywords :** hyperchaos Lorenz system, hyperchaos-based random number generator, D2D communications, C#

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