JPEG 2000 Wireless Image Transmission System using Encryption Domain Authentication

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Abstract— **In this paper, we propose a wireless high resolution video transmission system with encryption and authentication. The proposed system is implemented by JPEG 2000 coding. We implement JPEG 2000 coder by GPU in CUDA which is an integrated development environment for GPU, or by JPEG 2000 codec LSI. Moreover, the authentication system can check the user information in encrypted domain using Paillier encryption. Therefore, this system is more secure than conventional systems. We show that the proposed system can achieve 4K size coding by 2.34fps with CUDA, and HD size coding by 29.98 fps with LSI codec. In addition, we demonstrate that the authentication using Paillier encryption is successful.**

Keyword— **JPEG 2000, Paillier encryption, GPGPU, Image transmission, Digital cinema**

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