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(57) Abstract :

The present invention discloses an improved USB transfer device comprising a hardware-based encryption module (10), microcontroller (12), auto-wipe module (14), and USB connector (16). It enables real-time AES encryption and decryption during data transfer while monitoring unauthorized access attempts. Upon detecting intrusion, the auto-wipe module (14) initiates irreversible data erasure. The system operates independently of host software, supports secure firmware updates, and includes host authentication features, ensuring enhanced data protection and confidentiality for critical and sensitive information.

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